DOCUMENT RESUME

ED 421 855 FL 025 347

AUTHOR	Mitchell, Douglas E.; Destino, Tom; Karam, Rita
TITLE	Evaluation of English Language Development Programs in the Santa Ana Unified School District. A Report on Data System Reliability and Statistical Modeling of Program Impacts.
INSTITUTION	California Educational Research Cooperative, Riverside.
PUB DATE	1997-09-00
NOTE	203p.
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	MF01/PC09 Plus Postage.
DESCRIPTORS	Academic Achievement; Attendance Patterns; Change Strategies; *Data Processing; Educational Change; *English (Second Language); Information Systems; Language Fluency; Language Proficiency; *Limited English Speaking; Mathematics Instruction; Measurement Techniques; Organizational Change; Program Development; Program Effectiveness; Reading Skills; Research Needs; School Districts; *Second Language Programs; *Statistical Analysis

ABSTRACT

In response to concern about the effectiveness of programs for English-as-a-Second-Language students in California's schools, the Santa Ana Unified School District, in which over 80 percent of students are limited-English-proficient (LEP) conducted a study of both the operations and effectiveness of the district's language development program, using data accumulated over several years. The findings, documented in this report, cover five broad areas: information system reliability; language development services for LEP students; development of English fluency; impacts on reading and mathematics achievement; and an analysis of school attendance data. The report concludes with 14 recommendations for action in three areas: improving language development program effectiveness; improving data systems operations; and further study. Appended materials detail the technical aspects of the study. Contains 35 references. (MSE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 421 855

Evaluation of English Language Development Programs in the Santa Ana Unified School District

A Report on Data System Reliability And Statistical Modeling of Program Impacts

Douglas E. Mitchell
Tom Destino
Rita Karam

California Educational Research Cooperative
School of Education
University of California, Riverside

September, 1997

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
Jane Zykowski
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
1

CALIFORNIA EDUCATIONAL RESEARCH COOPERATIVE
UNIVERSITY OF CALIFORNIA, RIVERSIDE

FL025347

THE CALIFORNIA EDUCATIONAL RESEARCH COOPERATIVE (CERC)

CERC is a unique partnership between county and local school systems and the School of Education at the University of California, Riverside. It is designed to serve as a research and development center for sponsoring county offices of education and local districts – combining the professional experience and practical wisdom of practicing professionals with the theoretical interests and research talents of the UCR School of Education faculty.

CERC is organized to pursue six broad goals. These goals serve the needs and interests of cooperating public school members and the University by providing:

- Tangible practical support for school improvement
- Proven stategies for resolving instructional, management, policy and planning issues facing public education.
- Valuable professional development opportunities for current and future school leaders.
- Support for data-based decision-making among school leaders.
- Research, planning and evaluation activities that are meaningfully interpreted and applied to school district problems.
- Data analysis to assist in generating public support for effective school programs.

In addition to conducting research in these areas, CERC publishes reports and briefs on a variety of educational issues. CERC also sponsors regional workshops for local educational leaders.

CERC
Executive Staff

Irving G. Hendrick
Professor & Dean

Douglas E. Mitchell
Professor of Education
Director

Rodney T. Ogawa
Professor of Education
Director

Ronald E. Franklin
Assistant to the Directors

Roseanna Barrón-López
Chief Administrative Officer

School of Education, University of California, Riverside, CA 92521-0128 (909) 787-3026 FAX (909) 787-3491

CERC MEMBERS

SPONSORING OFFICES OF EDUCATION

Riverside County Office of Education

San Bernardino County Superintendent of Schools

SPONSORING SCHOOL DISTRICTS

Baldy View ROP
Banning Unified
Chaffey Joint Union High
Desert Center Unified
Desert Mountain SELPA
East San Gabriel Valley ROP
Etiwanda Elementary
Helendale Elementary
Jurupa Unified
Manhattan Beach Unified
Moreno Valley Unified
Ontario-Montclair School District
Oro Grande Elementary
Palos Verdes Peninsula Unified
Perris Union High
Redlands Unified
Riverside Unified
Santa Ana Unified
San Jacinto Unified
UC Riverside/Sherman Partnership
Val Verde Unified
Victor Elementary
Victor Valley Union High
Yucaipa-Calimesa Joint Unified

Evaluation of

English Language Development

Programs

in the

Santa Ana Unified School District

A Report on Data System Reliability

And

Statistical Modeling of Program Impacts

Douglas E. Mitchell
Tom Destino
Rita Karam

California Educational Research Cooperative
School of Education
University of California, Riverside

September 1997

Table of Contents

I. Executive Summary

II. Background: Issues Confronting Bilingual Education Program Design

III. The Evaluation Study Process

IV. The Results of The Reliability Study

V. Bilingual Program Enrollments, Student and Teacher Characteristics

VI. Answering the Central Evaluation Study Questions

VII. Conclusions and Recommendations for Action

VIII. References

Appendices

A. SPSS Command Files

B. Variables used in Analysis, Description and Computation

C. Interview Protocal and Staff Interview List

D. Annual Survey

E. Scannable Forms

Evaluation of English Language Development Programs in the Santa Ana Unified School District

A Report on Data System Reliability and Statistical Modeling of Program Impacts

Douglas E. Mitchell
Tom Destino
Rita Karam

California Educational Research Cooperative
School of Education
University of California, Riverside

I. Executive Summary

In 1974, the Supreme Court, in *Lau v. Nichols* (414 U.S. 563), upheld federal guidelines stating that "Where inability to speak and understand the English language excludes national origin-minority group children from effective participation in the educational program offered by a school district, the district must take affirmative steps to rectify the language deficiency in order to open its instructional program to these students." In response to this ruling and statutory enactments by the states, professional educators have worked to develop bilingual education programs intended to provide for the simultaneous experience of English language acquisition and academic achievement for this population.

In California, with the nation's largest non-English speaking population, bilingual education is both an educational concern and a highly charged political issue. Questions have been raised about both the methods employed and the achievement level of the students enrolled in this program. Such questions were raised by the Board of Education of the Santa Ana Unified School District (SAUSD), the governing body responsible for the education of the children within the District's boundary - a district in which more than eighty percent of the students are non-native English speakers (LEP). In order to find answers the Board requested the assistance of the California Education Research Cooperative (CERC) at the University of California, Riverside.

District and CERC staff met during the summer of 1996 and, following extended discussion, an evaluation study design was prepared and presented to the SAUSD Board of Education. The Board approved a contract with CERC to undertake a comprehensive review and evaluation of both the operations and the effectiveness of the District's language development programs using data that the District has accumulated during the past few years.

A Design Team consisting of District and CERC staff was created to both ensure continuous communication and feedback and to expedite the evaluation process. It was formed under the direction of the Superintendent, Dr. Mijares and led by the former Assistant Superintendent, Dr. Vargas, and the current Assistant Superintendent, Dr. Davies. The Team met periodically to discuss various issues related to student programs and services, district management, and other critical elements that make up the contents of this study. The CERC staff thanks the Design Team for their patience, diligence, and support during the course of this study.

The Santa Ana Unified District English Language Development Evaluation Study.

In order to meet the needs of the overwhelming majority of the students for whom English is not their first language, the District's educational professionals have developed and implemented a variety of special programs. Some emphasize rapid immersion into English language instruction while others are designed to facilitate continued academic learning within a student's native language, teaching English as a second language. Gathering and analyzing extensive data kept by the District to track services and students' development in each of these programs is the focus of this evaluation study. Specifically, the Board approved funding for two evaluation study components.

Component 1: Data Reliability and Validity

SAUSD has developed a data tracking system that has been designed to monitor students' language development and track the programs and services which they receive. This system contains the critical indicators for documenting the influence of various language development services on both academic and language attainment of LEP students. The first component provided for examining the reliability and validity of the data collected and maintained in the language development information management system to determine whether data collection procedures were uniform, well understood by teachers and administrators, and consistent in their assessment and recording of student progress. Qualitative and quantitative methods of reliability were utilized to check the consistency with which teachers assign bilingual programs, ELD levels and make recommendations regarding reclassification and redesignation of LEP students. This was necessary since further analyses depended on the quality of the data being analyzed and its reliability.

Component 2: Program and Service Effectiveness Modeling

Having validated the data, an evaluation of the effectiveness of specific language development services and programs was undertaken. Both Survival Analysis and General Linear Modeling statistical techniques were used to 1) make quantitative estimates of the length of time it takes students to move into high ELD levels and 2) evaluate the effectiveness of various language development programs in meeting the needs of students with different characteristics (i.e. various levels of language proficiency and prior academic preparation) as measured by academic growth and language attainment

over a three year period. The remainder of this section presents an overview of the major study findings and the general layout of this report.

Overview of Study Findings

The findings developed and documented in this report cover five broad areas. They include:

1) Information System Reliability

2) Language Development Services for LEP Students

3) The Development of English Fluency

4) Impacts on Reading and Mathematics Achievement

5) Analysis of School Attendance Data

A very brief summary of the findings in each area is presented here to orient readers of this report to the salient issues in the evaluation of English Language Development programs and services.

On the Reliability of SAUSD Data Systems

1. The District uses a variety of methods to insure consistency in data collection and recording, including training, one-on-one assistance to teachers and distribution of guidelines defining variables and reporting procedures.

2. The District's annual Program Services survey tends to be seen by teachers primarily as a reporting device – student program adjustments are made more continuously throughout the year and are not always entered immediately into the tracking database.

3. The administrative program categories reported in the Program Services annual survey do not accurately reflect the language development services students actually receive. These administrative categories are based on a combination of program design and teacher certification factors that separate some students receiving similar services and combine some groups receiving rather different services. Thus, students are classified into language development programs on the basis of the services being provided by their teachers – Transitional Bilingual Education for those receiving native language instruction and Immersion for those receiving sheltered instruction in English. Those receiving neither are classified as "mainstream" students, those experiencing both are labeled combined TBE & Immersion.

4. Analysis of language level coding and the movement from one language level to another indicate that annual reporting of student performance is too irregular. Large numbers of students are all reported as moving from one level to another at the same time, but staff are well aware that this movement is highly individualized

On SAUSD English Language Development Services for LEP Students

1. 18% of students are Native English speakers and receive no LEP services. 14% of LEP students have attained Fluent status. Of the remaining two-thirds, about half (31% of all students) are receiving TBE, 14% immersion, and 10% combined TBE + Immersion.

2. The TBE program serves the largest number of poverty children, more than 90%, immersion 80%, and the mainstream curriculum below the District average, between 60 and 70%.

3. Native language instruction, a substantial factor in Transitional Bilingual Programs, drops dramatically during grades 2 and 3.

4. Immersion teachers are most highly certificated overall, but TBE group of teachers contains widest range of certificated teachers, from highest to lowest.

On SAUSD English Language Development Program Impacts on Fluency

1. The average time it take students to move from one ELD level to another depends on which ELD level the student is at. It takes less time to move between the lower levels than the higher levels.

2. Factors such as grade level, ethnicity, special education, movement between schools, teacher characteristics and school cycles significantly influence the rate of language development.

3. Students in either Transitional Bilingual Education or English Language Immersion programs make substantially more rapid progress toward English fluency than do those who remain in the educational mainstream program.

4. Students enter Transitional Bilingual Education programs with significantly lower levels of English fluency (a full language development level below their peers in other programs) and these students make steady progress in closing the fluency gap during their first three years. Later in their elementary experience, however, these students tend to receive dramatically less native language support and to fall behind their peers in fluency development.

5. Language development programs differ substantially in the effectiveness with which they facilitate movement across specific stages in language learning.

6. The movement of middle school students across the various language development levels is typically slower than that for elementary students, high school students move at about the same rate as elementary students.

On the Relationship Between ELD Programs and Student Reading and Math Achievement

1. There are significant differences in the achievement levels of students in the District's four language development programs. However, this difference appear to be primarily due to student intake rather than program effectiveness differences.

2. Children move from Spanish to English achievement testing at all grade levels – 50% of those moving do so by the 6th grade.

3. Students taking their tests in Spanish substantially outperform those who take their tests in English. Students moving from the Spanish SABE test to the English language CTBS drop about 30 points in measured reading achievement – this is the equivalent of about 2 grade levels. The drop in measured mathematics achievement, though smaller, is also quite dramatic.

4. Factors such as special education, movement between schools, test language, student's English Language development levels, primary Language development levels, and ELD programs are important predictors in reading attainment.

5. Students' ethnicity, test language, ELD program type, school cycle, ELD level, PLD level and movement between schools have significant impact on the rate of Math attainment.

On the Influence of ELD Programs on Student Absenteeism

1. Students' ELD program enrollment, ELD levels, transiency rate, overage, test language, school cycle and poverty status significantly influence absenteeism.

Recommendations for Action

The report concludes with fourteen recommendations for action concerning three areas of interest. The rationale for each recommendation is presented in Section VII of the report.

1. ***Recommendations for Improving Language Development Prgram Effectiveness:***

1.1 Take steps to reaffirm District commitment to the two fundamental goals of education for all children: high levels of fluency in English and the highest possible academic achievement. And declare a willingness to utilize whatever program models and instructional strategies most effectively lead to the realization of these goals.

1.2 Acknowledge the complexity of the language acquisition process, the diversity of student needs and the great variety of ways in which students learn and teachers teach. At the same time, reaffirm District respect for the acquisition of fluency in all languages and treat student fluency in a non-English language as a valued asset to both their own education and to the larger community.

1.3 Given the extended period of time required to reach fluency in English documented in this evaluation study and supported by other recent studies of language acquisition, the District should carefully review the scope and sequence of the curriculum in each of its language development programs to make sure that students who will take five to seven years (or even longer) to reach full fluency have an opportunity to be exposed to materials that are challenging and interesting without overwhelming their existing language skills.

1.4 So long as the District seeks to utilize Transitional Bilingual Education techniques to support academic attainment for English language learners while they make the transition to English fluency, it is important to consider extending the transition period for two or more additional years to allow time for better development of English fluency.

1.5 Since children who enter Santa Ana schools sometime after their kindergarten year and those who move from one school to another, tend to be assigned to mainstream or mixed TBE and Immersion programs it would be appropriate for the District to review assignment processes and see if everything possible is being done to provide these children with the most appropriate possible educational programs.

1.6 Since teacher characteristics, including age, education and experience play a significant role in predicting program impacts on students, the District should continue to attend closely to the placement of teachers in work assignments where they are most likely to be most helpful in facilitating both language fluency and academic attainment.

1.7 Since all of the language development programs utilized in Santa Ana outperform the educational mainstream in facilitating both language fluency and student achievement, it is important for the District to resist

pressures to prematurely discontinue programs and rely on mainstream educational services to meet student needs.

1.8 While it is essential that students be assessed in English to determine their fluency and academic proficiency in English, the District should resist pressures to abandon testing student achievement in their native language.

2. ***Recommendations for Improving Data Systems Operations:***

2.1 Combine the Program Services survey with the preparation of student report cards and add elementary grade report card data to the District's electronic database. This shift in data collection would necessitate the development of a system of electronic report card preparation, which we further recommend.

2.2 Harmonize secondary school course information with the collection of data regarding the specific programs and services provided in elementary school programs.

2.3 On an annual basis, survey teachers, not about the services provided to each student, but about their current level of training in language development instruction and about their instructional practices.

2.4 Maintain reliable records regarding student assignment to various administrative program structures but, when collecting records on language development program services, use teacher reporting categories that distinguish clearly among services, leaving the collection of information about teacher training and instructional practices to a separate data collection process.

2.5 Monitor more precisely the characteristics of students assigned to various instructional services. Continue to analyze the ways in which family choice and professional judgment affect how students with different characteristics and educational needs are placed in different instructional programs.

3. ***Recommendations for Further Study***

3.1 It is important for the District to continue in its study of the impact of various English language development programs and services. The evaluation findings presented in this report are based on a data tracking system that has yet to collect data on an entire cohort of students passing through District schools, and no direct observations of students, teachers and school operations were made.

The Design of This Report

Following this Executive Summary, the body of this evaluation report is divided into six sections. Section II provides a theoretical and research based background to the evaluation study by highlighting four main themes visible in SAUSD. Section III describes the evaluation study process, i.e., the approach taken to the evaluation based on the background provided in Section II and the data sets and variables used for analysis. Section IV presents the analysis of District data system reliability. This section documents the usability of various SAUSD data systems. Section V describes the nature of the student body, i.e., demographic features, and identifies the nature and size of the various instructional programs in which students are enrolled. Section VI presents the major study findings, including the analysis of the types of services provided, the amount of time students take in proceeding to English language fluency and the relationship between language fluency in reading and math. This section also discusses how programs affect student engagement in school by focusing on the important topic of attendance as an indicator of school engagement. Section VII summarizes the study findings and presents recommendations for policy and program adjustments suggested by the study findings. The report ends with a series of methodological appendices that review the technical details of the study.

II. Background: Issues Confronting Bilingual Education Program Design

During the last three decades intensive research and evaluation on programs for English language learners in both Canada and the United States has generated significant insight into the challenges and opportunities facing school leaders seeking to improve English Language Development Programs in the public schools. Earlier research on language acquisition (at least in the United States) did not focus on schooling, but on language development and intelligence among immigrant populations. Intelligence tests became popular during the early part of this century as a means of predicting intellectual and academic attainment. As the use of these tests became more widespread, it was obvious that immigrants were performing poorly. Based on test data, a substantial group of psychologists concluded that poor performance reflected inferior intelligence rather than a language-based interference with test taking. This interpretation sprang from the prevailing view of language competence. Mastering English was seen as synonymous with vocabulary development – memorizing isolated words – a much simpler concept than those underlying contemporary views of "communicative competence." This simplistic view led naturally to a belief that performance problems encountered by people with limited English proficiency were evidence of genetic intelligence limitations. Some early researchers even concluded that since children of northern European families had less difficulty mastering English they must be of superior intelligence. In contrast, psychologists giving more weight to experience and less to heredity interpreted language performance problems to be the result of "interference" between native languages and the effort to learn English. While this kept them from equating language facility with intelligence, their analyses still placed the problem within the mind of the individual. Early theorists gave little thought to the possibility that language learning is grounded in social and cultural experience rather than mental ability.

The Canadian experience differs in a number of respects from that in the United States. The Official Languages Act of 1968-69 provided equal status for English and French at the level of the federal government. As a result, many English speaking middle-class parents took action to ensure that their children would eventually become fully bilingual citizens. Though wary of the negative aura associated with bilingualism in the U.S., Canadian parents sought to immerse their children in a minority language, French. Their goal was maintenance of their children's English literacy while facilitating French proficiency. Despite some early methodological problems (Hakuta, 1986), the foreign language immersion data from Canada began showing a surprisingly strong positive relationship between bilingual fluency and measures of cognitive ability. These positive findings changed the climate of program development and research in Canada by pointing to bilingual instruction as a positive learning environment (Cummins, 1978).

One factor supporting the more positive view of bilingual learning in Canada was, no doubt, the Canadian research emphasis on middle-class families seeking expanded language learning opportunities. This contrasts sharply with the continued U.S. emphasis on lower-class immigrant socialization. Political interpretations of the importance of speaking one language or another play an important role in many societies. Hakuta (1986, p. 43) assures us that choosing whether a child is to be raised a "monolingual" or a "bilingual" is not like "choosing a brand of diaper" – a matter of indifference to neighbors and community leaders. Quite to the contrary, this choice is typically interpreted to be either an act of devotion and loyalty to a family's new land and culture

or as maintenance of traditional mores and values, continued loyalty to the "old country" cultures.

Theoretical Framework. Provided with both opportunity and incentive, most ethnic groups involved in prolonged contact with other cultures and language groups will move toward a common language. The usual pattern is for immigrants, minority and lower status groups to adopt the language of the dominant group. Sometimes it has taken several hundred years, as happened with Gaelic in Great Britain. More often the shift comes over the span of three generations, as has been the case of European immigrants to Australia and European and Mexican immigrants to the United States. The rate at which groups shift from native languages to a majority language is currently being investigated by sociolinguists in the United States (Pease-Alvarez & Winsler, 1994).

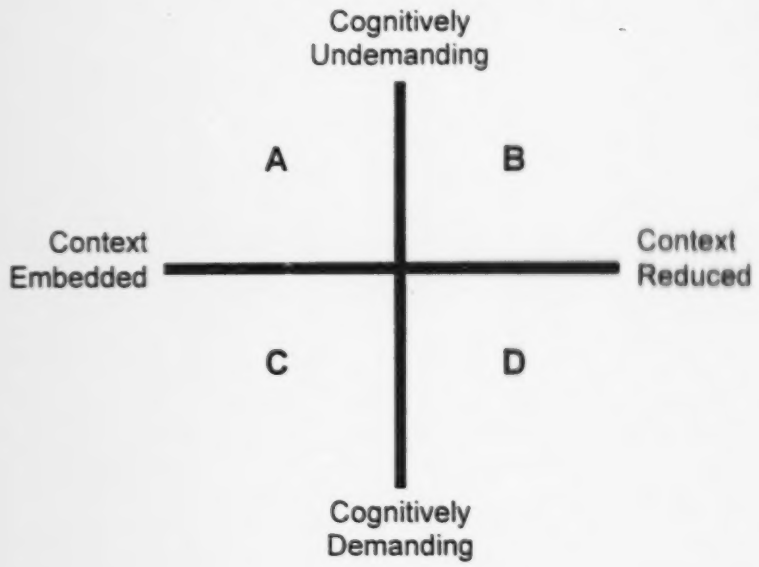
While language shift is the norm, counter pressures often arise to encourage maintenance of native languages. Most school districts in the U.S. including SAUSD, have programs designed to encourage a shift to the majority language (Krashen, 1996). The phrase "bilingual education" as used in American public schools almost always refers to *transitional* programs designed to expedite the shift to mainstream monolingual English classes as soon as children have mastered English skills sufficiently. This transitional goal has proven harder to reach than originally expected. Nearly all recent bilingual program evaluation studies suggest that the longer children remain in native language instruction, the better will be their ultimate second language development and the fuller their academic achievement. As will be discussed later, these findings are far from conclusive because of gaps in our knowledge regarding the nature of learning in such programs. Designing programs to capitalize on the supportive value of native language instruction is proving quite difficult. Not only is public support for multi-lingual educational programming rather weak, but is also difficult to find trained staff and adequate curriculum material.

The Difference between Social and Academic Language. The first research examining the social (rather than solely the psychological) foundations of language acquisition was that of Skuttnab-Kangas (1976) who studies native Finnish speakers in Sweden. Building on her work, Cummins (1979, 1980, 1981a, 1981b) proposed one of the first theoretical models distinguishing the learning of socially useful language skills from the development of language proficiency necessary to cope with academic subject learning. In his early formulation of the distinction, Cummins labeled the acquisition of social language as Basic Interpersonal Communicative Skills (BICS) and called the skills needed for academic functioning Cognitive Academic Language Proficiency (CALP) - two acronyms widely used by teachers and administrators as well as by the research community. Cummins, joined by others, has expressed concern that the use of these acronyms has oversimplified the complex distinction to be drawn between face-to-face conversational proficiency (BICS) and the more formal language system used to convey abstract ideas and concepts in an educational setting (CALP).

In context-rich-face-to-face communication, the meaning of words and sentences is socially developed and interpreted though a wide range of non-verbal, contextual cues. Academic oral and written language, by contrast, relies primarily on abstract words and sentences with fewer social and visual cues available to enhance its meaning. (Think of the difference between an

animated conversation aimed at getting tourist directions in a strange city and the kind of knowledge necessary to read a textbook on the chemical elements). In later works, Cummins elaborates his conception - distinguishing between "horizontal" and "vertical" dimensions to the problem of language complexity (Figure II.1). The horizontal dimension separates rich-textured and socially embedded language settings from the abstract, context-reduced settings characteristic of academic learning. The vertical dimension distinguishes intellectually undemanding situations where simple facts and straightforward ideas dominate from intellectually challenging environments where complex ideas and subtle concepts are essential. Appropriate and proficient use of language involves all combinations of contextual support and intellectual challenge, of course, but school learning depends most heavily on the language skills that are hardest to develop - those involving abstract concepts used in contexts where contextual clues are relatively rare. To date, there has been no systematic research to document where various school subject matter activities should be plotted on Cummins' horizontal and vertical dimensions. Consequently, this conceptually powerful map is not yet incorporated into school curriculum and program design.

Figure II.1 Dimensions of Language Use
(adapted from Cummins, 1994)



The Four Fundamental Issues in Language Learning

Four issues define the contribution of language learning research to school policy and program development. These issues are:

1. Whether the primary objective of language instruction can or should be to develop a single *common language* for all citizens or to encourage children to become part of a *multi-lingual society* by retaining various non-English primary languages.

2. Whether having and using a non-English language *interferes* with the acquisition of English fluency or results in an additive *reinforcement* of learning by enriching children's academic vocabulary.

3. Whether using native language instruction to build children's core academic subject knowledge helps to build long-term academic success by keeping children in touch with expected learning outcomes or only delays English language fluency by encouraging continued use of native languages.

4. Whether language development programs are more effective when special programs targeted exclusively on the needs of the English language learners are created, or when these students are provided with language and academic assistance services within mainstream educational programs.

Resolving these issues is made doubly difficult by the fact that public values as well as scientific evidence must be used to develop policy and programs to address them. Although the value questions remain the proper purview of school governance and policy making, recent advances in research on language learning is shedding new light on each of these issues. While the evidence is still not as comprehensive or reliable, as we would like, researchers have documented some consequences of various program approaches and have established a framework for separating empirical from value-based evaluation questions. In the following section we delineate the central scientific and value dimensions of each issue and summarize the available scientific evidence regarding consequences for schools and children.

Issue #1: Mono-lingual versus Multi-lingual Educational Goals

Addressing the question of the ultimate goals of language instruction requires that public values and scientific evidence resolve the following questions:

> *The value question*: Is it better to develop a multi-lingual society capable of communicating across national borders and ethnic divisions or to assure a single common language for all citizens?
>
> *The scientific question*: Do children who grow up speaking more than one language experience social success, and do they tend to have any more or less loyalty to their national cultures than mono-lingual citizens?

A clear cut answer to this scientific question in not possible at the present time, because the available evidence is sparse. However, Fernández and Nielsen (1986) and Garcia (1981), found positive relationships between being raised bilingually in the U.S. and higher levels of self-esteem, more ambitious economic plans, greater assuredness of achieving such plans, and higher grades in college. Although these findings favor native language maintenance, interpreting such a small number of studies as evidence that native language maintenance should be widely adopted is both scientifically premature and insensitive to larger issues of civic values and public purpose.

In multi-lingual societies like the Grand Duchy of Luxembourg, where three "prestige" languages, Luxemberger, German, and French, have official status and specific purposes in the fabric of the nation, valuing all three languages is seen as being nationally loyal (Baetens

Beardsmore & Lebrun, 1991). Further, speaking more than one language is viewed with social approval and certainly helps to promote social success. Individual citizens, and the society as a whole, have clear purposes for all three languages. As a result, the three languages are kept alive without substantial political debate. The situation is obviously different in the U. S. with regard to languages other than English. Minority groups, for both social and economic reasons, tend to shift to the English language rather quickly following entry into the social mainstream. Non-English languages are often lost after a couple of generations, and their maintenance is not essential to the preservation of minority cultures and ethnic identities – as can be seen in the case of the Chicano movement in the U.S.

Volumes have been written on the advantages of developing a multi-lingual/multi-cultural society in the United States. Rationales range from, "we will all get along better" to "it works in other countries", almost always with an admonition to, "look at Europe." Unfortunately, statements such as these are generally offered in the absence of any supporting data. As war in the former Yugoslavia, with its three official languages – Serbo-Croation, Slovenian, and Macedonian – and many dialects and unofficial languages clearly demonstrates, multi-lingualism is certainly no guarantee of harmony. The selection of an "official" language for use in society, or in the schools, has little to do with the character of the language itself – it is a matter of politics and public values.

Israel and Peru provide contrasting examples of what happens when policy makers seek to mandate the use of a specific national language. In Israel, social conditions and religious attitudes toward Hebrew and the Promised Land made possible the rebirth of Hebrew as a national language. Though insistence on Hebrew as the official language created significant social tensions, the social forces at work in this country – including religious cohesion and rapid immigration from many different native language groups – worked to make the language policy successful. The Velasco government in Peru was unable to overcome key social forces, however, and could not alter the language practices in this country. This government's politically motivated attempt to make Quechua the national language failed because government policy could not overcome the tendency for speaking this native tongue in public to be associated with being an Indian, with all the socioeconomic stigmatization associated with that status (Mannheim, 1984). The key to successful language development programs is not so much strong governmental policy or intensive school programs, but an understanding of the nature and outcomes of relevant social forces (Bratt-Paulston, 1988). It is tempting to believe that school programs can guarantee popular usage of a particular language. But, alas, school program selection is only one factor influencing the ultimate language choice for most ethnic groups. To make school programs more potent forces, we need to get a better grasp on just what social forces are at work and how they interact with community norms, political mandates and educational programs.

Language is rarely the leading factor shaping cultural development. Rather, language follows social development, mirroring societal conditions and human relationships. In all of the areas of the world where bilingual education programs have been subjected to systematic study, the evidence indicates that schools and schooling can *facilitate* existing social trends, but cannot reverse the impact of major social, economic, and political forces.

With a few notable exceptions, the prevailing norm in language acquisition is for immigrant populations to shift, over a period of one to three generations, to the routine use of their new country's dominant language. In Santa Ana, with its broad support for continued use of Spanish in homes and neighborhoods, the shift to English may be slower than found in other settings, but there is no reason to believe it will not happen. Support for English language fluency is not only a priority concern in the public schools, it is supported politically and by the language requirements of high paying jobs in the California economy. There are, of course, counter pressures. Many find English difficult to learn, many experience the demand to become English language fluent as a threat to their traditional cultural identities, and many will use language independence as a rallying call to generate political power and public pressure for other reforms. Few would challenge the ethical principle that a minority group has the right to preserve its own language. Moreover, as the economy becomes increasingly global, many see the value of preserving and enhancing the language skills of the many linguistic sub-cultures in our society. By the middle of the next century, it might turn out that one of America's greatest economic strengths is its ability to nurture language diversity. This is where public values and scientific evidence meet – linking the desire for a common culture with the demonstrable advantages of multi-lingual fluency.

Issue #2: Interference versus Reinforcement in Bilingual Learning

> *The value question*: Should educational programs try to capitalize on the pre-existing language capacities of students or urge the students to set aside their primary language and concentrate on mastering a curriculum built entirely on the use of English language vocabulary and syntax?
>
> *The scientific question*: To what extent is language learning made easier or harder by encouraging children to link new words and concepts in English with their pre-existing native language proficiency?

Does knowing one language, perhaps using it every day at home, interfere with or support the acquisition of a second one? This question is more complex than it might at first appear. There are, of course, the obvious differences in word meaning and syntax that can confuse a child trying to acquire a new language. English has borrowed heavily from many different languages, but has not always preserved the original meanings of the words and phrases borrowed. Moreover, English syntactical rules regarding such matters as verb placement, the use of gender words and countless other details can easily distract someone whose native language uses a different syntax. Additionally, training in any language attunes the human ear to some sounds and obscures others – sound patterns that might interfere with recognition of the words and phrases of the new language. Even more important, interference could be cultural rather than structural or technical. Languages and language uses are differentially valued in every society. Some languages are seen as morally superior or more prestigious than others. When this happens, the native speakers of the higher status group come to look upon adoption of their language as a test of the loyalty of less prestigious groups. And, for their part, the less prestigious groups can come to see preservation of their language as a matter of ethnic pride or personal identity. This kind of interference may not limit the ability to learn a new language, but it certainly undercuts the motivation to do so.

On the other side, it is easy to see that knowing one language could dramatically reinforce the learning of a second. After all, becoming communicatively competent in any language requires that one master the concept of correspondence between speech and action, and develop at least a rudimentary grasp of syntax and vocabulary. Additionally, to know a language is to know something about the situations to which words are properly linked. That is, to know a language requires that one know something about the social and natural world to which it applies. Thus, the person who already has one language will have at his or her disposal the fund of knowledge that was developed during the process of acquiring the first language.

Language transfer – the combination of reinforcement and interference processes – was the dominant interest of researchers who launched the field of Second Language Acquisition. These researchers (for example, Brown, 1973; Dulay and Burt, 1974) limited their studies to grammatical features and sequences, with the result that the work did not have a lasting impact. But while the work was active, several important insights were generated. First, it was found that language learning for native speakers is often quite different from the way non-native speakers appropriate the same language. Moreover, these differences in learning order do not depend very much on which non-English language the second language learner has in his or her background. That is, having fluency in any non-English language affects the learning of English substantially and in roughly the same way for all prior languages. Finally, these researchers demonstrated that individuals learning English as a second language tend to initially rely on their native language grammar or syntax rules, thus confronting different learning problems than do native speakers of English.

This line of research work was cut short by changes in the larger field of psychology. Because it relied on behaviorist psychological assumptions about conditioning and reinforcement, rather than the more recent cognitive psychological concepts of communication and socialization, the issue of language transfer was greatly de-emphasized in research undertaken since about 1975.

When language acquisition research shifted toward the communicative features of language, and the cognitive processes underlying language usage, classroom instructional systems were largely ignored. The primary exception to this trend appeared in some studies of how middle-class English speaking Canadians coped with French-Immersion instructional programs.

Selinker, Swain, and Dumas (1975) conducted an investigation of native English speaking seven-year-old children. They found a substantial number of transfer errors attributable to English grammatical structures. In the context of Immersion program settings under study, classrooms were found to develop unique social and cultural features in which transfer errors from English were more acceptable than they would be in situations involving interaction with native French speakers. These types of errors are so common to total Immersion programs that the term "immersion dialect" (Richard-Amato, 1996) has been used to refer to the language use patterns of students in such programs. The extent to which the specific patterns of interference found in Canada are reproduced in Structured-English Immersion programs like those being used in Santa Ana Unified School District is unknown. Also unknown, therefore, is the effect these errors have on the classroom proceedings and student achievement.

Both Hakuta (1986) and Pica (1995) have urged careful study of the classroom and social conditions under which second language reinforcement and interference occur. These scholars believe that there is much yet to be learned about how to capitalize on positive transfer and overcome the negative consequences of language interference.

Issue #3: Common Underlying Proficiencies versus Expedited English Fluency

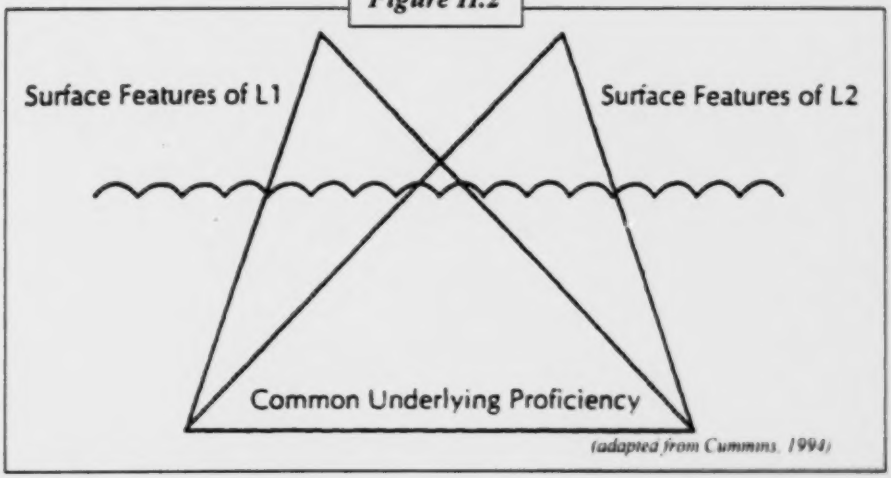
> *The value question*: Is it better to encourage children to explore academic subjects using their native languages or should they concentrate almost exclusively on learning the nuances of English language communication?
>
> *The scientific question*: If children devote a significant amount of time to acquiring academic knowledge in a native language, does this learning transfer quickly and effectively when English language skills improve?

Regardless of whether continuing use of non-English languages is socially approved, the basic factual question is whether individuals working in two different languages keep their knowledge in separate mental domains and, therefore, have to re-learn concepts if they shift to a new language. Or, as has been more recently argued, do individuals keep conceptual knowledge in the same mental storehouse and make it available in whatever language they are using at any given moment? This issue is a bit more complex than it at first appears (Grosjean, 1982). Quite obviously, at some level the human mind has a single storehouse for concepts and information. Otherwise, as Hakuta (1986) points out, it would be impossible to report in English on a trip to Japan during which no English was used. It is also easy to see that all languages are used in ways that are, to some extent at least, independent. Otherwise, translation would amount to simply substituting words without having to worry about misleading connotations or lost meanings. A number of researchers are working to identify the specific situations in which the common underlying mental processes can be counted upon to bring academic learning and language acquisition together, and to delineate factors that are responsible for keeping language systems separate and distinct (see, Kolers, 1978; Paivio & Desrochers,1980; Paradis, 1980; Hakuta, 1986 and Bernhardt & Kamil, (1995).

Several recent studies of bilingual education and the experience of Limited English Proficient students leaves the impression that the independence-interdependence issue has been settled (Collier, 1989; Ramirez, Yuen, & Ramsey, 1991; Lindholm, 1991; Cummins, 1994). These authors assert a common underlying structure to language proficiency, with only supreficial vocabulary, syntax and sentence structures separating their use. Cummins (1994) formulation of this concept is presented in Figure II.2. To illustrate this view, once a person learns a concrete operation (like addition or purchasing a loaf of bread) in one language, it is not necessary to re-learn the same idea again in a new language. Similarly, a complex concept (like government or jealousy) has been recognized in one's native language, it is transferred to another through translation, not by learning it anew. Using proficiency test scores from two different languages, these researchers demonstrate that language interdependence is quite general. This can be criticized, however. Troike (1981), for example, insists that transfer must be interpreted in relation to the specific circumstances under which it takes place. Edelsky, Hudelson, Flores,

Barkin, Altwerger, & Jilbert (1983) question the use of test performance data for determining the actual level of language proficiency and literacy.

Figure II.2



Perhaps the best statement of current research on this problem is provided by Bernhardt & Kamil (1995) in their study of second language reading development. These researchers conclude that learning to read in a second language is more complex than the argument over independence versus interdependence of languages acknowledges. They see the value of interdependent skills very much influenced by the relative level of literacy in a primary language. They recommend careful study of just how literate a person needs to be in one language before it will help them with learning a second. Moreover, the contributions of the first language to the second probably also depend on the extent to which the language learner has become literate in the second language.

Issue #4: Targeting Services versus Integrating Learning

Up to this point we have been attending to underlying theoretical and conceptual issues, rather than the practical problems of language development program design. These theoretical issues lead to the development of language acquisition models that guide program design by showing how language learning works. A fourth critical issue facing educators seeking to create appropriate English Language Development supports for children is the practical question of program design. As with the other issues, this issue can be addressed either through deliberation on public values or through reflection on scientific analyses.

> *The value question*: Should the special needs of English language learners be addressed by separation of student groups and targeting programs and services on those with language learning needs, or should language development be embedded within the educational mainstream - meeting special needs of the English learners in the context of their engagement in the school's regular educational programs?
>
> *The scientific question*: Is language learning facilitated most effectively by highlighting the specific needs of English language learners and addressing them with special programs, or by providing these children with a sense of full integrat on and inclusion in the regular school program?

Concern with issues of bilingual education program design date from a report from the American Institutes of Research (Palo Alto, CA) almost 20 years ago. That study, known as the AIR Report, created a typology of language development programs, separating native language instructional programs, English as a Second Language approaches, and Immersion. It compared bilingual programs with properly trained staff to mainstream programs – finding that elementary students in bilingual education programs did not experience systematic enhancement of reading or mathematics achievement. Reactions to the Air Report were energized. Realizing that they could no longer blame poor performance on lack of trained staff, bilingual educators sought to strengthen their professionalism by creating new teacher education programs for bilingual teachers and advocating for the use of native languages for instruction. With the development of more sophisticated language development techniques and programs it becomes important to recognize that, "for bilingual education to be meaningfully evaluated, the variation in existing program characteristics will have to be thoroughly understood" (Hakuta, 1986, p. 222).

Researchers responding to publication of the AIR Report began to focus on the amount of time necessary for LEP students to learn English and attain on-grade-level academic achievement. The results of this line of research indicate that immigrants between 8 and 12 years of age, with at least 2 years of native language schooling in their home country, take 5 to 7 years to reach the level of average performance by native English speakers (Collier, 1989; Cummins, 1994). Younger arrivals, with no schooling in their native language, may take even longer to reach the level of average performance by native speakers – possibly more than 10 years. Instruction in the native language for young children has recently been shown to be effective in helping children make the transition to English-only instruction (Collier, 1995).

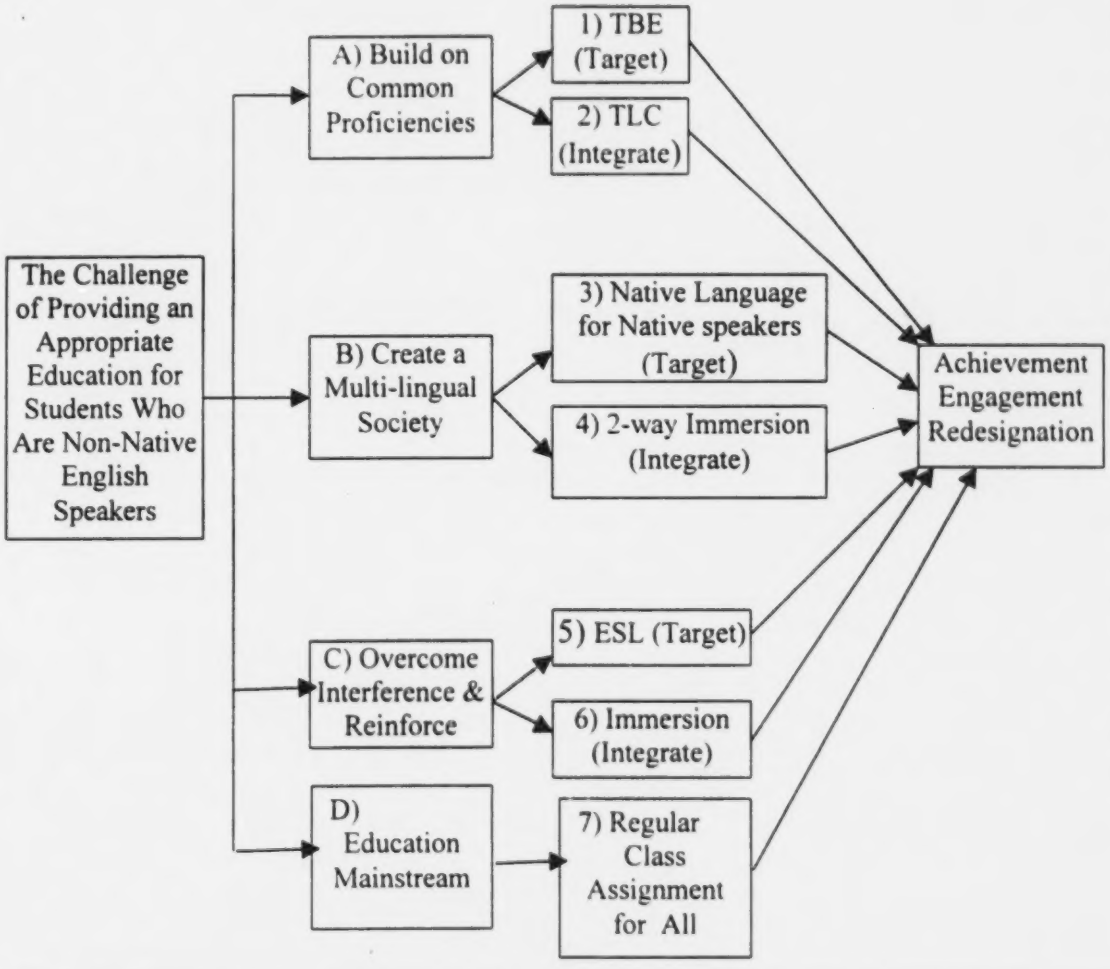
Models and Programs

In order to fully understand and evaluate English Language Development programs and services in Santa Ana (or anywhere else for that matter), it is important to distinguish between overall "models" of language development and the specific "programs" in which students are enrolled (see Trueba, 1979; Hornberger, 1991). Programs are designed and implemented to meet a variety of goals and to accommodate important practical conditions. They must, for example, comply with governmental regulations, create workable teacher and student assignment systems, live within budgetary constraints, accommodate staff, space or material shortages, fit into the scheduling needs and supervision patterns required of other programs, etc. Instructional models, by contrast, are derived from the various beliefs about language acquisition and sound teaching practices. Thinking about models helps clarify issues and focus activities, but actual programs are never able to fully incorporate all the key features of any given instructional model. Models are defined by their goals with respect to language, culture, and society. Programs are defined by the ways in which they seek to meet the needs of students, teachers and school operations.

Alternative language development models developed by resolving the four issues reviewed above are brought together in Figure II.3. This figure shows the flow of language development students starting with the entry of non-native English language students into the schools (at the left edge of the figure). Moving across the figure, students are assigned to one (or perhaps a combination) of seven alternative language development programs (shown in the central part of

the figure). Shown at the right side of the figure are the three goals of all language development: High Academic Achievement, Strong School Engagement, and Redesignation as Fluent English Proficient. The six numbered language development models shown in the central part of the figure represent alternative ways of resolving (at least tentatively) the four fundamental language acquisition issues discussed previously.

Figure II.3: Alternative Models of English Language Development Programs


The Challenge of Providing an Appropriate Education for Students Who Are Non-Native English Speakers
A) Build on Common Proficiencies
B) Create a Multi-lingual Society
C) Overcome Interference & Reinforce
D) Education Mainstream
1) TBE (Target)
2) TLC (Integrate)
3) Native Language for Native speakers (Target)
4) 2-way Immersion (Integrate)
5) ESL (Target)
6) Immersion (Integrate)
7) Regular Class Assignment for All
Achievement
Engagement
Redesignation

Though many different language development typologies are offered in the literature (see Mackey, 1972), none are grounded in the sort of theoretical analysis presented here. The first two models, Transitional Bilingual Education and Transitional Language Classrooms, are logical choices whenever the primary objective is to build on the common underlying proficiencies that allow students to learn important academic concepts using their primary language before making

a shift to English. The first of these common proficiency models, Transitional Bilingual Education, resolves the fourth issue in favor of targeting services on language learners in special program settings. Model #2 emphasizes integration of services into a regular classroom setting by maintaining a classroom environment that looks and feels more like mainstream instruction.

Models 3 and 4 on Figure II.3 arise logically whenever primary emphasis is given to creating a multi-lingual society. When multi-lingualism is encouraged using a targeted strategy, the result is a program of primary language instruction for the speakers of various non-English languages. Those who embrace the integrated service model naturally turn to model #4 and generate Two-way Immersion programs.

Instructional models 5 and 6 follow the logic of overcoming primary language interference and reinforcing early English fluency. These models – ESL and Structured Immersion – concentrate primarily on developing English language fluency on the assumption that overall academic achievement will follow the shift to the dominant language. The ESL programs emphasize targeting instruction on students with specific needs, the Immersion model is designed to put the language learning students directly into the mainstream.

The model numbered 7 represents placing students into the educational mainstream, providing them with no special language development services. For many years this was the only placement available. Due to staff shortages, or the beliefs of parents and school staff, this remains an option for many schools.

The models associated with both the common proficiencies approach, marked A) in the figure, and the multi-lingual outcomes approach, marked B) in the figure, encourage maintenance of the child's primary language. These models are characterized by classroom utilization of both majority and minority language with the assumption that using a minority language is not only a right for its speakers but a potential resource for majority language speakers (Ruíz, 1984).

When evaluating the specific programs developed to implement these various models in Santa Ana USD, it is important to remember that all students in the District are working toward the same goals: proficiency in English, strong attachment to the learning process, and the highest possible academic achievement. Regardless of program placement, all students are working toward redesignation to Fluent English Proficient (FEP).

At a practical level, only the TBE and Immersion models (models #1 and #6) are being used with a sufficiently large number of students in Santa Ana to permit meaningful evaluation. All of the other models are being tried in this District, but these two designs cover thousands of students and have been tracked over several years.

III. The Evaluation Study Process

This section describes the data utilized to conduct this evaluation study and the central questions addressed in the analysis of that data.

Although six different models of language development are identified in the literature on bilingual education (see Section II discussion of Figure II.3), the vast majority of the Limited English Proficient students in Santa Ana USD are assigned to programs that rely on just two of these basic approaches – English Language Immersion and Transitional Bilingual Education. Many students experience both of these instructional designs (usually by changing teachers or changing schools). And a substantial number have only been exposed to "Mainstream" programs in which neither of these two English Language Development techniques are used. That is, nearly all students in Santa Ana USD have one of four basic language learning experiences: 1) Transitional Bilingual Education (TBE), 2) English Language Immersion (ELI), 3) mixed TBE and ELI, or 4) a Mainstream experience without specific language development support.

This study explores the character and effectiveness of the four types of language development programs serving Santa Ana USD students. In assessing program differences, multiple factors influencing student learning, such as ethnic background, home language, regularity of attendance, school to school transiency, and teachers' training and experience are analyzed. In addition to assessing language development outcomes, the study also examines achievement in reading and mathematics as well as student engagement in schooling. Longitudinal tracking of student program assignments and academic performance data enables us to estimate academic and language proficiency growth over time.

The study began with a thorough analysis of the information available for tracking language development programs and their effectiveness – ascertaining the reliability of data system operations and the accuracy of data recording procedures. Once assured that available data provide a meaningful and reasonably accurate picture of language development program operations, the study team developed statistical models for assessing the rate of language development, the factors influencing it, and the extent to which language development influences achievement and student engagement.

The Data Available for Evaluating Santa Ana USD Language Development Programs

Data were collected for this study utilizing interviews, analysis of District program guidelines and other documents, and an extensive array of electronic file data from the District's two data management systems (CASTS and SASI).

Interviews with central office personnel, school principals, bilingual resource teachers, data management personnel and regular classroom teachers were undertaken to gather data on the extent to which staff shares a common understanding of the District's program designs and data management systems. Program guidelines and other documents were reviewed to interpret the goals of each program design and to identify the procedures used to implement programs and collect data tracking program performance.

Santa Ana has developed a well-designed and comprehensive electronic data management system which became the focal point for most data collection. This system monitors students' language development and academic achievement and tracks the programs and services that they receive. This tracking system relies on two different databases CASTS and SASI. CASTS keeps information on elementary school students, traditional year middle school students and high school students, while SASI keeps information on year round middle school students. Table III.1 presents the data from these two databases that were used in the analysis.

These data were made available from the District's computer center and cover all students enrolled during the first trimester of the 1996-97 school year. Information on teacher education and experiences was also obtained for school year 1996-97. Each data set was converted for analysis using the standard Statistical Package for Social Sciences (SPSS). Data preparation, including restructuring data base file formats, translation of variables, construction of suitable indicators and statistical analysis was a highly complex technical undertaking. Specific procedures are reported in Appendices A and B. Data from the SASI database (such as attendance codes) had to be recoded in a fashion consistent with information found in CASTS. All six data sets were matched by either student identification number or teacher names to interconnect the data.

The Central Study Questions

Analysis of the data collected for this study was organized around seven central study questions covering three issues of fundamental importance – the reliability of the data system, the design and operation of language development programs, and the impact of language development programs on fluency, achievement and school engagement. The techniques used to develop answers to the central study questions are briefly described here – the answers themselves are presented in the next three sections of this report.

Two Questions on Data System Reliability

> **Question #1 - Operational Reliability:** To what extent is the data system well understood, fully supported and commonly implemented across all students, teachers and schools?

As described in Section IV, the operational integrity of the LEP student tracking system was examined through interview and document analysis. A cross-section of key District staff members were asked to describe how they use the LEP tracking system and how they judge the quality of the information they enter into it and receive from it.

> **Question #2 - Record Reliability:** Are data records complete, accurate and internally consistent?

The quantitative data available from District records were closely examined for reliability and consistency, using techniques outlined in Section IV.

Table III.1: Data Bases Available for Analysis

Data Set	Description	Variables	
Attendance	930,250 LEP, FEP and EO records of daily & period attendance for school year 97	Student Id School Absence Date All day absent code	Period 0 through 9 Absence codes (for middle and secondary only)
Test Results	631,632 LEP, FEP and EO test scores on the CTBS and SABE standardized test instruments for school years 94 through 97.	Student Id Test Name Sub Test Name Test Date Grade Level Test was Taken Test Level	Test Form Raw Scores Grade Equivalent Score Normal Curve Score National Percentile Score Scale Score
Student Demographics	53, 932 LEP, FEP and EO students enrolled in the 97 school year	Student Id City State Zip Birth Date Birth City Birth State/Nation Sex Ethnic Current School Language Code	Current Grade Teacher Name Date Started at District Lunch Date Lunch Code Handicap Code Special Education Code Date Entered current school Enter code Date Left school Reason Left
Language Development Program Data	552, 902 LEP records on Programs and Language Development levels for a 3 year duration were collected from annual surveys (bubble sheet). Also the same information was collected on a representative sample of 2,500 students in a special survey on 8/12/96 to get intermediate data	Student Id Program Codes Start Date of Program Assignment End Date of Program Assignment English Language Development Codes Primary Language Development Codes	Start Date of Language Development Codes End Date of Language Development Codes Service Codes Start Date of Services End Date of Services Redesignation to FEP Date of Redesignation
Enrollment Data	419,783 LEP, FEP and EO records on school enrollment and release for school years 93 through 97	Student Id School School Year School Term	Date Enrollment Release Enrollment/Release Description
Teacher Personnel File	Data on more than 1,700 members of teaching staff	Teacher Name Gender Birth Date Hire Date	School Assignment Job Title Credential Codes Credential Category for each Credential Code.

> ***Question #3 - Program Structures:*** What English Language Development program options are available for students in Santa Ana USD? How do these programs differ in their approach to promoting English fluency and student achievement? How many students participate in each type of program?

As described in Section II of this report, relying on administrative program classifications to document the effectiveness of various English Language Development strategies is likely to be misleading because teachers' classroom practices are often influenced by their actual skills and professional philosophies, rather than administrative program classifications. Some teachers who are not formally certified to implement bilingual instructional programs may do so on the basis of informal training, and teachers who strongly believe in an English Language Immersion or a Transitional Bilingual Education approach to language development may use the techniques appropriate to their beliefs, rather more thoroughly than those implicit in an administrative program definition. Thus, this question was addressed by relying on teacher reports of the language development strategies they actually used. As described in Sections V and VI, findings from this approach to program definition were compared with those that resulted from reliance on administrative program assignments in critical areas.

> ***Question #4 - Program Enrollment:*** To what extent do programs enroll students with different demographic characteristics?

If students were randomly assigned to language development programs in such a way that every program had an identical mix of student demographic and background characteristics, evaluation of program effectiveness would be relatively easy. Since both parents and educators are reasonably confident that particular students will benefit much more from one program approach than another, however, such an assignment system would not be professionally responsible or politically feasible. Students are assigned to programs on the basis of considered judgments about which program features are most likely to meet their specific needs. Consequently, it is essential in undertaking an evaluation of program effectiveness that close attention is given to the differences in the students being served by each program type.

Conceptually, the evaluation problem boils down to this: if students are randomly assigned and programs are differentially effective, highly effective programs will produce higher levels of English proficiency and greater student achievement in reading and mathematics. If, on the other hand, students are differentially assigned to the most appropriate programs, and the programs are highly effective in meeting their specific needs, students spending the same amount of time in different programs will be more or less equal in their levels of English fluency and academic achievement. While outcomes will be similar, however, differential program assignment will mean that programs differ most significantly in the types of students who enter them, rather than in the levels of attainment reached when they leave.

For this reason, a crucial element in this evaluation study was careful documentation of the differences in the students entering each language development program.

Question #5 - Teacher Assignment: Are there systematic differences in the types of teachers working in each of the ELD programs?

Programs cannot be expected to be equally effective if the teachers who are assigned to them differ substantially. For this reason, statistical analysis of the extent to which teachers in the four Santa Ana USD programs differ systematically in age, gender, experience, education and certification was done. Limitations imposed by the distribution of missing data and the number of different variables that can be entered simultaneously made it necessary to examine teacher impacts on language program performance separately from the study of student demographic factors.

Three Questions on Language Development Program Effectiveness

Question #6 - Impacts on the Time it Takes to Learn English: How long does it take for students in various language development programs to become fluent in English? In addition to program design, what demographic or school factors influence the rate at which students achieve fluency? Do programs differ in their effectiveness with different types of students? Are some program designs more effective at promoting initial literacy development, while others work better at moving students from intermediate to more advanced levels of English proficiency?

The most important advance in our understanding of English language development programs produced by this evaluation study was the recognition that all prior research has applied inappropriate statistical models to the assessment of how long it takes to become English language proficient. As described in more detail in Section VI, the time it takes for development of language proficiency cannot be appropriately estimated by averaging the amount of time it takes for students who succeed in reaching this goal to do so. To estimate the time it takes to reach fluency in this way ignores the learning time taken by all those students who have not yet reached fluency at the end of any given study period.

The appropriate statistical technique for estimating the time it takes to reach fluency is the one developed for studies in medical science. It is called "Survival Analysis" and estimates the time it takes to move from one status to another (often in medicine from contracting a disease to dying from it, hence the name survival analysis). Survival analysis was applied to the data from Santa Ana USD's student tracking system in order to produce an accurate estimate of the time required to reach fluency and to examine the effects of program assignment and other factors on that time. If researchers were able to track a cohort of students over a very long period of time so that every child has had enough time to develop full fluency, there would be no difference between the Survival Analysis techniques used in this evaluation study and the "average time to fluency" calculations used in prior studies. But there are no studies that have tracked all students from their initial encounter with English to the development of full fluency. It is for this reason that estimates of the time it takes keep getting longer as researchers are able to follow students for a longer period of time.

Question #7 - Impacts on Achievement: To what extent do language development programs affect student achievement in reading and mathematics? To what extent are Santa Ana USD students able to read at grade level during their elementary school years? Does measured achievement depend significantly on the language in which students take an achievement test? What factors, in addition to ELD program design, have a substantial impact on student achievement?

Reading and mathematics achievement were studied using the District's CTBS and SABE test data. Test performances for the last three years were examined in order to estimate the rate of achievement growth for all students who have taken District tests more than once. The statistical technique used to estimate the extent to which academic achievement in reading and mathematics is influenced by language development levels and enrollment in specific language development programs is called General Linear Model (GLM) analysis. This procedure allows for the use of both variables that divide students into groups (such as ethnic background, program enrollment or home language) and variables that affect individual students (such as absenteeism, grade level or time not enrolled in Santa Ana schools).

GLM analysis makes it possible to estimate the certainty of conclusions regarding the influence of various factors on achievement. Additionally, GLM analysis also estimates the amount of change in student achievement produced by each factor.

Question #8 - Impacts on Engagement in Schooling: To the extent that student absenteeism is an indicator of disengagement from schooling, is there any evidence that language development programs differ in their ability to get students to become more fully engaged in school?

The final question addressed in this evaluation study is the extent to which language development programs influence student engagement in their schooling. While we would have preferred a better measure of engagement, information on the rate of student absenteeism from school was available, and could serve as a general indicator of engagement. Of course, there are factors other than motivation that influence attendance, so this is not an ideal variable, but (as the analysis presented in Section VI shows) there is reasonable evidence that language development plays an important role in student motivation.

IV. The Results of the Reliability Study

The reliability study component of this evaluation examined the District's data systems used to track Limited English Proficient programs and students. An interview strategy was used to assess the extent to which staff shares a common understanding of the District's program designs and data management systems. A more quantitative approach was used to examine the internal integrity of the data systems themselves. This reliability study was confined to an analysis of the District data systems used to track English Language Development programs and services. The scope of work for this evaluation study did not cover documentation of teachers' actual classroom practices or independent assessment of students' learning activities and language or academic achievement levels.

The Interview Study of Data System Implementation

Reliability assessment began with a series of interviews with:

District design team members,
central office personnel,
school site administrators,
ELD chairs, and
bilingual resource teachers

to identify various data systems and program elements, and to determine if data collection procedures were uniform, well understood among teachers and administrators and consistent in assessment and recording of student progress (see Appendix C for a description of interviewees). This review documented Santa Ana USD's uniquely comprehensive data management system designed to track a broad array of important indicators of student language and academic development. Interviews with school site staff, District office staff and District computer center personnel revealed a clear pattern of respect for the importance of the data, and substantial care in generating and recording required data elements. The most important data elements are collected using an annual survey soliciting teachers' judgments regarding the levels of English and primary language proficiency for all students and asking them to report on the nature of language development services provided to all students. Distributed once each year, this survey tracks the progress of all Limited English Proficient students as they move through various language development stages toward re-designation as Fluent English Proficient. The surveys utilize scannable forms that are scanned at the District's computer center and entered into the District's comprehensive student database.

The District holds training sessions to train bilingual resource teachers on variable definitions and procedures for completing these annual surveys. The resource teachers train other teachers at each school site. The bilingual resource teachers are responsible to ensure that the surveys are filled out correctly at their respective school sites. Teachers who have problems completing the surveys receive one-on-one assistance from the bilingual resource teachers.

The District also provides documents that define and describe the criteria used for distinguishing language development levels. These guidelines encourage uniformity and consistency in student and program reporting. This information can be found in a District document entitled, **LEP Student Program Services Database Information & Instructions** (1995). The criteria used for distinguishing language development levels address several widely recognized stages of language acquisition. These stages, referred to in the District document as the "language development progression," were used to analyze the transition rate at which students moved toward English language fluency. The stages are known as the "W Codes" in the District documents and identified with these codes on the annual survey. There are five codes for English language development (W0-W4) and five codes for Primary or native language development (W5-W9). The coded levels have the same names for English and Primary language development, with each stage characterized by several descriptors to guide teacher judgment of student progress. The descriptors refer to student language learning behaviors that can be observed by teachers in determining the precise stage or level of each student's proficiency. The five stages of English language development are listed below, together with some of the accompanying indicators of stage-appropriate language behavior.

Code	***Stage Name and Descriptors***
W0	Preproduction (ELD 1) Uses physical responses, i.e., actions and gestures Responds through performing an action Points to items or pictures
W1	Early Production (ELD 2) Uses actions and gestures Speaks using one or two-word phrases Uses yes/no answers
W2	Speech Emergence (ELD 3) Expands receptive vocabulary by following complex directions Plays simple games Uses complete sentences
W3	Intermediate Fluency (ELD 4) Produces oral and written connective narratives Engages in conversation, problem/solution, discussions, debates, interviews, and extended dialogues Uses content area vocabulary
W4	Advanced Fluency (ELD 5) Fully conversant Continues enrollment in transitional/sheltered classes

Placed in the mainstream of courses, based on student progress and teacher recommendation

In addition to recording teacher judgments regarding each student's language development level, the Districts Program Services survey form (see Appendix D) records students' bilingual program assignment using a series of codes beginning with the letter "V," referred to as the "V Codes." These codes distinguish among seven different language development program options, as follows:

Code	***Description***
V0	TBE/Literacy/EASE Transitional Bilingual Education (Native Language Instruction)
V1	TBE/TLC – Transitional Language Class (Transitional/Sheltered English)
V2	ELD/Immersion/Sheltered – With a Bilingual Instructional Assistant in Native Language
V3	ELD/Immersion/Sheltered – With a Bilingual Instructional Assistant in other Language
V4	ELD/Immersion/Sheltered – No Bilingual Instructional Assistant
V5	ELD and Mainstream Instruction
V6	Mainstream only

The program codes utilized on the District Program Services survey do not necessarily reflect the services students actually receive. They are administrative program codes and were created to record student classifications that correspond to program regulations rather than teaching activities. California has created a variety of program requirements and teacher credentials targeting the needs of English language learners and requires school districts to define program assignments in terms of whether these requirements are fulfilled. As a result, if students are receiving various bilingual instructional services from teachers who are not fully credentialled to offer them, they will be given a "V6 - Mainstream" or other V-Code corresponding to the teacher's credential status.

While this does not make District data any less reliable, it does change the way in which students must be classified if we are to assess the effectiveness of the services they receive rather than of administrative program designations. In order to analyze the language development services LEP students actually receive, it is necessary to utilize both the V-Code data and the information provided by teacher reports on the instructional practices used in their classrooms. This information is reported on the District survey form as part of a series of "Y" and "Z" Service Codes. These codes are used to describe the extent to which teachers use native language, immersion techniques or mainstream educational practices in reading and other subject areas.

The care the District staff has taken to train teachers, to use the same survey forms and procedures from year to year, and to process and store the data reliably has helped to ensure consistency and reliability in the assignment of ELD codes and monitoring of LEP

student reclassification and redesignation. Additionally, many bilingual resource teachers have utilized on-line data system access to keep student information up to date. The frequency of information updating can be judged from the fact that 25 percent of the entries in the LEP database are entered at times other than the annual survey date.

The Quantitative Side of Reliability Analysis

In addition to the interview-based review of data system operation and reliability, CERC staff undertook a statistical reliability check aimed at measuring the extent to which teachers use consistent definitions and procedures in recording student English language development levels. A special administration of the District's Program Services survey was done in August 1996, covering a representative sample of 2,500 students. This was done in anticipation that it could be coordinated with the regular annual survey scheduled for September. The September survey was expected to collect data on all of the approximately 35,600 LEP students in the District – including the 2,500 surveyed in August. This would have permitted a reliability check by comparing the August and September reports of student ELD levels and services assignments (which would have been provided by different teachers within a brief span of time). Unfortunately, the crush of accommodating class assignment and staffing changes brought on by the California Class Size Reduction Initiative forced significant delay on the annual survey which could not be completed until January, 1997. Since students are expected to move from one language development level to another and to have services adjusted commensurate with their learning, the time interval between August and the following January is too long for a rigorous reliability analysis. Comparison of these two data sets does indicate, however, that student data reporting is consistent and reasonable, with students generally advancing from one English language development level to the next in a timely fashion.

The most important conclusion to be drawn from the comparison of these two data sets is that students move from one English language development level to another and receive appropriate changes in their language programs throughout the year, not just at times when the obligatory annual report is made. In most schools, interview data reveal LEP student achievement and language development needs are reviewed at the time trimester report cards are generated and program adjustments made based on those assessments. Some schools even maintain their own paper form or electronic databases in order to track program changes more frequently. While school staff members recognize the value of completing the District requested survey of program services, they tend to see it more as a reporting device than as a tool to help them make decisions regarding programs and services for LEP students. It is, therefore, recommended that the annual surveys be completed every trimester at the same time the students' report cards are prepared.

Five additional issues were identified, while checking the data for reliability. First, service delivery to middle and high school students is not recorded on the annual Program Services survey. This makes it impossible to perform some important evaluation analyses for these students. For example, without program service data it is

not possible to assess the impact of language development programs on the academic achievement of middle and high school students.

Second, for a large number of students the scale scores on CTBS and SABE tests are not available in the District database, making it necessary to limit analysis to normal curve equivalence (NCE) scores. These two scales are mathematically linked, so no real loss in achievement information was suffered. The primary difference between these two scoring systems is that NCE scores are calculated in such a way that the average score for students at every grade level is 50 points. Scale scores, on the other hand, are constructed so that the expected average score goes up each year as students progress to higher grades. Percentile and grade-equivalence scores, which were available for analysis, are convenient indices, but they are not suitable for statistical analysis of factors influencing achievement.

The NCE scores from CTBS and SABE are accurately norm-referenced and can be used to effectively compare student achievement against grade-level expectations. That is, it is appropriate to compare CTBS and SABE scores among student groups and across language development program designs.

Third, there were no standardized test data for kindergarten and first grade students for academic year 1997. In previous years, first graders had been tested but scores on these students have often been viewed as unreliable and they were dropped as a result. This means that there are no academic achievement data available on more than 10 percent of the District students. These students, included in assessments of language development are dropped from analyses related to academic achievement.

Fourth, although the data management system provides grade point averages for middle and high school students, it does not capture this information for the elementary students. Both the design team and CERC staff agreed that obtaining student report card grades would be an important source of information regarding academic achievement. On a pilot basis, CERC staff developed 11 data collection forms to match elementary report cards used during the last three years. A feasibility study was made to determine if it would be possible to use these forms to collect report card data on a sample of four or five thousand LEP and English proficient students in grades K-5. (Copies of the scannable forms are in Appendix E). After pilot testing the process at one elementary school it was discovered that the amount of time required to reproduce this data would greatly exceed the resources available for this evaluation study. It is recommended that electronic report cards be designed so that teacher judgment regarding student academic progress can be captured as an important means of testing language development program effectiveness. Electronic report cards would permit automatic scanning of this information into the District LEP database at the end of each trimester.

Fifth, we note that teachers do not track the exit dates for students' Language Development levels with great consistency. For 4,504 students of the 35,678 students for whom ELD levels are reported, the exit dates for one ELD level do not correspond to starting dates for their next ELD level. To resolve this issue the exit date variable was

dropped from the analysis and the end of each level was reset to correspond to the starting date for the next level. Further, approximately 1,719 of the 35, 678 students were reclassified from a higher to a lower ELD level (that is, they have a start date for a lower ELD classification that is later in time). This indicates that teachers occasionally decrease their estimates of student English proficiency by 1 or 2 levels. It is impossible to know whether these lowered estimates of language proficiency are the result of earlier errors in recording or the result of the fact that judging student attainment is complex and may change as teachers have more experience with a particular student. We developed a recoding scheme that was reviewed and approved by the Design Team to solve this inconsistency.

The recoding scheme was based on the assumption that language proficiency itself does not diminish over time. Thus, in each of these cases we assigned the earliest reported starting date for the lowest ELD level achieved by the student. Then, each ELD level assignment starting date for a student was compared to all lower ELD level assignment dates, and kept only if it was more recent than the assignment dates corresponding to all lower ELD levels.

Fortunately, each of the five reliability issues identified above was spread broadly across the LEP database, keeping systematic distortion to a minimum. Where data were collected and recorded, we estimate that at least 90 percent of all records are accurate and reliable for use in statistical analyses.

V. Bilingual Program Enrollments, Student and Teacher Characteristics

Before analyzing the character and impact of various approaches to English Language Development being utilized in Santa Ana USD, it is important to develop a general picture of the students enrolled in this large, urban and highly diverse community and to identify the nature and size of the various instructional programs in which they are enrolled. The data files available for this evaluation study contain records on 53,026 students enrolled in grades Kindergarten through 12th grade. Nearly 90 percent of these students are of Hispanic origin, however all of the major ethnic groups tracked in the California Basic Education Data System (CBEDS) are represented. Students from various Asian backgrounds slightly outnumber the Whites (2,476 to 2,154). Blacks constitute a bit more than 1 percent of the student population, while Native American, Filipino and Pacific Island groups each represent substantially less than 1 percent.

Fewer than 20 percent of all SAUSD students are native English speakers. While Spanish is, by far, the most common non-English language (spoken by almost two-thirds of the student body), at least 31 other languages are native to the remaining one-fifth of the students.

Just about three out of every four students lives in poverty.

More than half of the students (57 percent) attend year-round schools.

When it comes to English Language Development, the student body can be divided into five distinct groups. About one child in five (18%) are native English speakers and do not receive services for Limited English Proficient students. An additional 14 percent of the students have attained Fluent English Proficient status and are not now receiving LEP services. Of the remaining two-thirds of the students, about half (31 percent of all students) are receiving Transitional Bilingual Education services. Fourteen percent have been receiving their English Language Development support through Immersion programs, while about 10 percent of all students have received some combination of TBE and Immersion instruction.

Student Enrollment. Table V.1, below, shows the instructional service pattern at each of the District's 45 schools. In the left hand column are listed the school names. Across the columns of the table are shown the actual count and the percentage of each school's student body belonging to each of the five different language development groups.

As the table reveals, Limited English Proficient students are far from evenly distributed among the SAUSD schools. Although only 35 percent of the district students are enrolled in Transitional Bilingual Education programs, a number of schools are providing more than half their students with TBE services. To be exact, 19 of the 32 elementary schools in the district have identified at least half of their students for Transitional Bilingual Education services (either alone or in combination with Immersion programs). In contrast, at least 50 percent of the students in four elementary schools (Muir, Greenville, Taft and Mitchell) and one intermediate school (MacArthur) are not designated as Limited English Proficient and are not given any bilingual program services. In four other elementary schools (Jefferson, Madison, Martin and King) the Non-LEP student group is larger than those in any one bilingual education program group. No high school has more than 15 percent of their students designated for TBE, all but one

have less than half that number. While 16 percent of all students are being served in Immersion classes, they are dispersed among schools in such a way that no school has more than half of its students so designated.

Table V.1: Student Enrollment by School by ELD Program

Program Enrollment as Defined by Language Services Provided													
	Not LEP/FEP		TBE		TBE + Immer		Immersion		Mainstream LEP		Mainstream FEP		School Total
School	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count
43 Pio Pico Elem	29	4	727	88	29	4	25	3	18	2	16	2	844
50 Adams Elem	137	17	473	59	44	5	86	11	61	8	82	9	883
51 Diamond Elem	99	12	368	46	121	15	158	20	53	7	83	9	882
52 Edison Elem	109	12	588	62	76	8	122	13	47	5	64	6	1,006
54 Fremont Elem	172	16	519	49	157	15	158	15	45	4	64	6	1,115
55 Harvey Elem	58	11	307	60	81	16	47	9	21	4	35	6	549
56 Hoover Elem	195	18	616	56	155	14	82	7	47	4	62	5	1,157
57 Jackson Elem	242	23	400	37	46	4	147	14	236	22	86	7	1,157
58 Jefferson Elem	360	37	323	33	42	4	226	23	33	3	168	18	1,152
59 Lincoln Elem	117	13	507	56	193	21	52	6	43	5	50	5	962
60 Lowell Elem	54	5	697	67	187	18	62	6	40	4	17	2	1,057
61 Madison Elem	563	44	476	37	166	13	82	6	5	0	24	2	1,316
62 Franklin Elem	20	4	305	59	113	22	27	5	48	9	27	5	540
63 Martin Elem	403	43	252	27	220	24	40	4	14	2	43	4	972
64 Monroe Elem	102	14	423	56	115	15	71	9	40	5	83	10	834
65 Monte Vista Elem	270	30	483	53	62	7	45	5	43	5	16	2	919
66 Muir Elem	474	77	8	1	1	0	9	1	125	20	154	20	771
67 Roosevelt Elem	143	14	775	75	31	3	52	5	35	3	43	4	1,079
68 Santiago Elem	408	37	486	44	88	8	80	7	33	3	104	9	1,199
69 Sepulveda Elem	104	13	376	48	190	24	83	11	27	3	86	10	866
70 Greenville Elem	531	76	11	2	1	0	80	11	77	11	199	22	899
71 Washington Elem	226	20	704	64	59	5	107	10	12	1	91	8	1,200
72 Wilson Elem	160	13	721	61	148	12	111	9	49	4	45	4	1,234
73 Taft Elem	446	50	6	1	28	3	379	42	34	4	210	19	1,103
75 Remington Elem	56	12	293	61	16	3	107	22	8	2	55	10	535
76 Mt View HS	41	28	1	1			5	3	98	68	65	31	210
77 Mitchell Elem	275	91					1	0	27	9	7	2	310
78 Sierra Intermediate	104	8	221	18	262	21	277	23	361	29	148	11	1,373
79 MacArthur Intermediate	449	62	60	8	33	5	36	5	146	20	450	38	1,174
80 Lathrop Intermediate	93	5	396	21	575	31	540	29	239	13	249	12	2,092
81 Santa Ana HS	207	9	188	8	165	7	635	28	1038	46	529	19	2,762
82 Valley HS	314	15	68	3	73	3	620	29	1055	50	798	27	2,928
83 Carr Intermediate	140	9	407	26	262	17	336	22	406	26	276	15	1,827
84 Willard Intermediate	244	15	332	21	370	23	355	23	276	18	149	9	1,726
85 McFadden Intermediate	380	25	339	22	96	6	168	11	565	36	390	20	1,938
86 Saddleback HS	469	26	24	1	18	1	417	23	875	49	985	35	2,788
87 Spurgeon Intermediate	129	11	168	14	317	27	380	32	184	16	197	14	1,375
90 Century HS	329	18	26	1	64	4	418	23	975	54	780	30	2,592
91 Cesar Chavez HS	54	16	23	7			35	10	229	67	84	20	425
92 Kennedy Elem	32	4	520	70	62	8	114	15	19	3	8	1	755
93 Heninger Elem	39	4	722	81	60	7	49	6	17	2	28	3	915
94 Garfield Elem	187	20	531	58	122	13	9	1	65	7	35	4	949
95 Carver Elem	107	13	601	71	65	8	51	6	19	2	46	5	889
97 Walker Elem	33	5	373	58	23	4	194	30	16	3	61	9	700
98 King Elem	327	40	273	33	123	15	32	4	61	7	19	2	835
Total all Schools	9,431	21	16,117	36	5,059	11	7,110	16	7,865	17	7,213	14	53,026

Table V.2 rearranges the ELD program enrollment data by grade level. The data in this table demonstrate that student enrollment differs from year to year, as well as by school. The TBE program enrollment is much more heavily concentrated in the early elementary years (with grades 1, 2 and 3 assigning more than half their students to Transitional program services).

Mainstream Fluent English Proficient enrollments go up steadily as the children get older, with more than a third of all high school seniors being assigned to Mainstream FEP programs. Immersion and English only enrollments are more consistent across the grades.

Table V.2: Student Enrollment by Grade Level by ELD Program

		Program defined language services provided												Table Total	
		Not LEP/FEP Proficiency		TBE		TBE & Immersion		Immersion		Mainstream LEP		Mainstream FEP			
		Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
GRADE	0	2051	34.5%	2575	43.3%	46	.8%	480	8.1%	489	8.2%	301	5.1%	5942	100.0%
	1	1277	22.1%	3073	53.3%	201	3.5%	514	8.9%	318	5.5%	386	6.7%	5769	100.0%
	2	926	18.5%	2695	53.9%	318	6.4%	535	10.7%	167	3.3%	359	7.2%	5000	100.0%
	3	808	17.6%	2403	52.4%	403	8.8%	476	10.4%	167	3.6%	332	7.2%	4589	100.0%
	4	691	16.6%	1730	41.5%	830	19.9%	449	10.8%	135	3.2%	337	8.1%	4172	100.0%
	5	725	17.6%	1388	33.8%	1026	25.0%	434	10.6%	142	3.5%	396	9.6%	4112	100.0%
	6	535	13.5%	1048	26.5%	1056	26.7%	523	13.2%	288	7.3%	504	12.7%	3954	100.0%
	7	520	13.3%	614	15.7%	716	18.3%	666	17.0%	758	19.4%	635	16.2%	3909	100.0%
	8	485	13.3%	261	7.2%	143	3.9%	903	24.8%	1132	31.0%	724	19.8%	3648	100.0%
	9	501	12.6%	120	3.0%	130	3.3%	982	24.7%	1366	34.4%	874	22.0%	3973	100.0%
	10	401	12.0%	32	1.0%	119	3.6%	624	18.7%	1278	38.3%	883	26.5%	3337	100.0%
	11	337	12.9%	108	4.1%	55	2.1%	371	14.2%	939	36.0%	801	30.7%	2611	100.0%
	12	252	13.6%	70	3.8%	16	.9%	153	8.2%	687	37.0%	681	36.6%	1859	100.0%
Table Total		9509	18.0%	16117	30.5%	5059	9.6%	7110	13.4%	7866	14.9%	7213	13.6%	53026	100.0%

Table V.3 breaks down the student enrollment data by the official administrative designations used to classify all students. Seven of the columns in this table correspond to the V-Codes found on the district bilingual services tracking survey form. The ninth column shows the count of students *not* designated as Limited or Fluent English Proficient (the numbers in this column are identical with those in the first column of Table V.1). Many more students in this table are designated as in "Mainstream Only" LEP programs (12,997 versus only 7,865 in Table V.1) because teachers not adequately credentialed for bilingual instruction are administratively classified as serving mainstream programs, even if they use Transitional Bilingual or Immersion instructional techniques. But for this shift, the information in this table closely parallels that seen in Table V.1. Note that on the basis of administrative classification, Jackson and Santiago schools join Jefferson, Madison, Martin, Muir, Greenville, Taft, Mitchell and King as schools with relatively large English only enrollments. It is also important to recognize that Diamond, Edison, Lincoln, Franklin, Sepulveda and Walker schools all report a plurality of their students to be officially enrolled in mainstream programs, the teacher service delivery reports presented in Table V.1 indicate that most students in these schools are actually receiving TBE services.

Table V.4 maps the relationship between the two methods of English Language Development program definition. As this table reveals, three factors account for virtually all of the reclassification of students. First, a number of students in the administrative group labeled TBE (171) and TLC (670) also were reported to be receiving Immersion instructional services and are therefore moved into the combined TBE & Immersion column. Second a somewhat larger group of students administratively identified as in Immersion programs are reported to have received at

least some instruction in TBE programs and are thus classified as having been in both programs (1,814 from the Immersion + Native language aide group, 208 from the Immersion + bilingual

Table V.3: Student Enrollment by School in Programs Defined by V-Codes on Survey Form

	V-Code Program in 97																		Table Total	
	TBE - Native		TLC - Transitional		Immersion + Native		Immersion + Other		Immersion only		Mainstream + ELD		Mainstream only		FEP Mainstream		Eng Only Mainstream			
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Pio Pico Elem	634	76%	107	13%	18	2%	5	1%	2	0%	4	0%	17	2%	15	2%	29	3%	844	100%
Adams Elem	256	29%	160	18%	48	5%	18	2%	23	3%	11	1%	141	16%	81	9%	137	16%	883	100%
Diamond Elem	140	16%	98	11%	131	15%	4	0%	13	1%	46	5%	269	31%	73	8%	99	11%	882	100%
Edison Elem	240	24%	108	11%	77	8%			25	3%	3	0%	377	38%	57	6%	109	11%	1008	100%
Fremont Elem	402	36%	103	10%	198	18%	29	3%	9	1%	1	0%	94	9%	63	6%	172	16%	1115	100%
Harvey Elem	241	44%	68	13%	22	4%	1	0%	48	9%	1	0%	71	13%	33	6%	58	11%	549	100%
Hoover Elem	383	34%	216	19%	102	9%	2	0%	42	4%	7	1%	141	12%	53	5%	195	17%	1157	100%
Jackson Elem	197	20%	116	12%	92	9%	38	4%	20	2%	11	1%	175	18%	82	8%	242	25%	1157	100%
Jefferson Elem	221	19%	16	1%	101	9%	90	8%	22	2%	10	1%	159	14%	160	14%	360	32%	1152	100%
Lincoln Elem	260	28%	39	4%	148	16%	4	0%	12	1%	7	1%	315	33%	43	5%	117	12%	962	100%
Lowell Elem	278	27%	357	35%	110	11%	41	4%	16	2%	30	3%	112	11%	17	2%	54	5%	1067	100%
Madison Elem	274	21%	162	12%	79	6%	63	5%	81	6%	1	0%	60	5%	21	2%	563	43%	1318	100%
Franklin Elem	89	16%	126	25%	70	14%	1	0%	7	1%	23	5%	141	28%	24	5%	20	4%	540	100%
Martin Elem	149	15%	136	14%	143	15%	3	0%	43	4%	17	2%	27	3%	43	4%	403	42%	972	100%
Monroe Elem	267	33%	80	10%	23	3%			103	13%	2	0%	163	20%	80	10%	102	12%	834	100%
Monte Vista Elem	294	33%	69	8%	37	4%	17	2%	1	0%	37	4%	151	17%	15	2%	270	30%	919	100%
Muir Elem	1	0%	1	0%	4	1%	1	0%	1	0%	33	5%	75	10%	138	19%	474	65%	771	100%
Roosevelt Elem	550	53%	182	17%	80	8%			2	0%	8	1%	70	7%	33	3%	143	14%	1079	100%
Santiago Elem	202	17%	210	18%	14	1%			76	6%	7	1%	172	14%	102	9%	406	34%	1199	100%
Sepulveda Elem	87	10%	130	15%	161	19%	5	1%	2	0%	19	2%	265	31%	82	10%	104	12%	866	100%
Greenville Elem			1	0%					10	1%	76	9%	81	9%	195	22%	531	59%	899	100%
Washington Elem	385	32%	226	19%	72	6%	11	1%	10	1%	9	1%	184	14%	89	7%	226	19%	1200	100%
Wilson Elem	423	35%	258	22%	81	7%	3	0%	42	4%	17	1%	167	14%	44	4%	160	13%	1234	100%
Taft Elem	1	0%			298	27%	30	3%	4	0%	3	0%	118	11%	190	17%	448	41%	1103	100%
Remington Elem	125	24%	108	20%	34	6%			15	3%			146	28%	44	8%	58	11%	535	100%
Mt View HS			1	1%					1	1%	29	15%	61	31%	65	33%	41	21%	210	100%
Mitchell Elem					1	0%							15	5%	7	2%	275	92%	310	100%
Sierra Intermediate	17	1%	128	10%	247	19%	10	1%	19	1%	385	30%	284	22%	101	8%	104	8%	1373	100%
MacArthur Intermediate			51	4%	4	0%	1	0%	9	1%	20	2%	266	23%	369	32%	449	38%	1174	100%
Lathorpe Intermediate	59	3%	60	3%	202	10%	97	5%	132	6%	732	35%	526	25%	190	9%	93	4%	2092	100%
Santa Ana HS	29	1%	6	0%	9	0%	1	0%	632	23%	42	2%	1359	50%	441	16%	207	8%	2762	100%
Valley HS	3	0%	10	0%	8	0%	4	0%	201	7%	318	11%	1407	49%	613	21%	314	11%	2928	100%
Carr Intermediate	31	2%	160	9%	212	12%	7	0%	168	9%	217	12%	672	37%	199	11%	140	8%	1827	100%
Willard Intermediate	159	9%	38	2%	111	7%	4	0%	411	24%	185	11%	424	25%	123	7%	244	14%	1726	100%
Mcfadden Intermediate	2	0%	29	2%	17	1%	7	0%	17	1%	631	33%	509	26%	332	17%	380	20%	1938	100%
Saddleback HS			12	0%	241	9%	13	0%	8	0%	23	1%	1143	41%	853	31%	489	17%	2788	100%
Spurgeon Intermediate	27	2%	17	1%	374	27%	2	0%	15	1%	293	21%	387	27%	143	10%	129	9%	1375	100%
Century HS			1	0%	209	8%	2	0%	27	1%	232	9%	1174	45%	609	24%	329	13%	2582	100%
Cesar Chavez HS			1	0%	2	0%			2	0%	32	8%	247	58%	80	19%	54	13%	425	100%
Kennedy Elem	269	39%	186	25%	59	8%	36	5%	13	2%	5	1%	110	15%	8	1%	32	4%	755	100%
Heninger Elem	494	55%	180	20%	55	6%	4	0%	18	2%	27	3%	58	6%	25	3%	39	4%	915	100%
Garfield Elem	242	27%	200	22%	65	7%	1	0%	8	1%	22	2%	151	17%	34	4%	187	21%	949	100%
Carver Elem	367	42%	184	21%	16	2%	1	0%	55	6%	1	0%	100	11%	46	5%	107	12%	889	100%
Walker Elem	141	21%	82	12%	80	12%	51	7%	1	0%	1	0%	235	34%	60	9%	33	5%	700	100%
King Elem	108	13%	87	8%	68	8%	12	1%	53	6%	2	0%	179	22%	14	2%	327	39%	835	100%
Table Total	8093	16%	4503	9%	4114	8%	622	1%	2423	5%	3579	7%	12997	25%	6081	12%	9509	18%	53026	100%

aide with a different language program, and 1,037 from the Immersion only program). Third, the substantial number of students administratively classified as in one of the two mainstream

programs actually received TBE and/or Immersion instructional programs. Based on teacher reports, 4,387 (808 + 3,579) students received TBE services, 1,159 (458 + 701) received both TBE and Immersion instruction, and 3,025 (1,009 + 2,016) were exposed to Immersion programs.

Table V.4: Cross-tabulation of Administratively Defined ELD Programs With Programs Defined by ELD Services Provided

		Program defined language services provided					
		Not LEP/FEP	TBE	TBE & Immersion	Immersion	Mainstream LEP	Mainstream FEP
V-Code Program in 97	TBE - Native		7894	171			
	TLC - Transitional		3814	670			
	Immersion + Native			1814	2289		
	Immersion + Other			208	411		
	Immersion only			1037	1382		
	Mainstream + ELD		808	458	1009	1124	179
	Mainstream only		3579	701	2016	5712	957
	FEP Mainstream			4			6077
	Eng Only Mainstream	9509					

Program Demographics. Information is available covering several demographic characteristics of the students enrolled in each of the SAUSD instructional programs. The ethnic composition of each program is shown in Table V.5 (using the seven broad ethnic categories developed for the CBEDS data system). In addition to the fact that an obviously large proportion of each program is comprised of Hispanic students, it is important to note that more than 98 percent of both White and Black students are enrolled in mainstream programs. Additionally, fewer than 3 percent of the Asian population groups are enrolled in Transitional Bilingual or combination TBE and Immersion (35.1 percent are in Immersion programs, the rest in mainstream programs).

Table V.5: Student Ethnicity by ELD Program Services

		Program defined language services provided												Group Total	
		Not LEP/FEP Proficiency		TBE		TBE & Immersion		Immersion		Mainstream LEP		Mainstream FEP			
		Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
ETHNIC	Hispanic	8382	13.6%	18038	34.1%	5001	10.6%	6137	13.1%	7338	15.6%	6079	12.9%	46885	100.0%
	White	1966	91.3%	4	.2%	2	.1%	30	1.4%	36	1.7%	116	5.4%	2154	100.0%
	Black	690	96.8%	1	.1%	1	.1%	3	.4%	10	1.4%	8	1.1%	713	100.0%
	Asian	191	7.7%	13	.5%	42	1.7%	870	35.1%	429	17.3%	931	37.6%	2476	100.0%
	Native American	18	64.3%					2	7.1%	2	7.1%	6	21.4%	28	100.0%
	Filipino	49	46.7%					13	12.4%	8	7.6%	35	33.3%	105	100.0%
	Pacific Islander	79	52.7%	5	3.3%	1	.7%	15	10.0%	20	13.3%	30	20.0%	150	100.0%
Group Total		9385	17.8%	18061	30.5%	5047	9.6%	7070	13.4%	7843	14.9%	7205	13.7%	52611	100.0%

With only 28 total students identified, the Native American population is too small to consider studying independently. And the Filipino and Pacific Island groups are too small to support any conclusions where evidence is at all mixed.

Table V.6 shows a breakdown of instructional program enrollment by the native language of the students. Not surprisingly, this data closely parallels the ethnic data just described. English only students (with a single exception that is apparently a coding error) are not receiving LEP services. About half of the Spanish speakers are in TBE or mixed TBE and Immersion programs. Nearly half the Vietnamese speakers, about a third of the Cambodian and Lao speakers, and more than half of the students in the "All Other Languages" group have achieved Fluent English Proficient status and are no longer receiving ELD services. This contrasts rather sharply with the 15.1 percent of native Spanish speakers and 22.5 percent of native Hmong speakers who have been redesignated as FEP.

Table V.6: Student Languages by ELD Program Services (all language groups with more than 100 native speakers)

		Program defined language services provided												Group Total	
		Not LEP/FEP Proficiency		TBE		TBE & Immersion		Immersion		Mainstream LEP		Mainstream FEP			
		Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Language group	English Only	9509	100.0%					1	.0%					9510	100.0%
	Spanish			16103	39.5%	5016	12.3%	6117	15.0%	7376	18.1%	6140	15.1%	40752	100.0%
	Vietnamese			5	.4%	22	1.9%	438	37.0%	189	16.0%	529	44.7%	1183	100.0%
	Cambodian					10	1.5%	302	45.3%	154	23.1%	200	30.0%	666	100.0%
	Lao			1	1.0%	5	4.8%	35	33.3%	24	22.9%	40	38.1%	105	100.0%
	Hmong			3	2.2%	2	1.4%	72	52.2%	30	21.7%	31	22.5%	138	100.0%
	Other Lang			3	.6%	4	.8%	143	28.4%	86	17.1%	268	53.2%	504	100.0%
Group Total		9509	18.0%	16115	30.5%	5059	9.6%	7108	13.4%	7859	14.9%	7208	13.6%	52858	100.0%

As reported in Table V.7, poverty among the SAUSD students is not evenly spread across the various instructional programs. Three-quarters of all students are at or below the poverty line, but only half of those who are not LEP classified fall into this group. Transitional Bilingual Education programs serve the largest proportion of poverty children (more than 90 percent), while Immersion programs have an 80.7 percent rate and mainstream programs, a below average 60 to 70 percent poverty rate.

Table V.7: Student Poverty Rates by ELD Program Services

		Program defined language services provided												Group Total	
		Not LEP/FEP Proficiency		TBE		TBE & Immersion		Immersion		Mainstream LEP		Mainstream FEP			
		Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Poverty Status	Non-Poverty	4847	51.0%	1581	9.8%	489	9.7%	1374	19.3%	2384	30.1%	2995	41.5%	13630	25.8%
	Poverty	4662	49.0%	14536	90.2%	4569	90.7%	5736	80.7%	5502	69.9%	4218	58.5%	39244	74.2%
Group Total		9509	100.0%	16117	100.0%	5059	100.0%	7110	100.0%	7886	100.0%	7213	100.0%	52874	100.0%

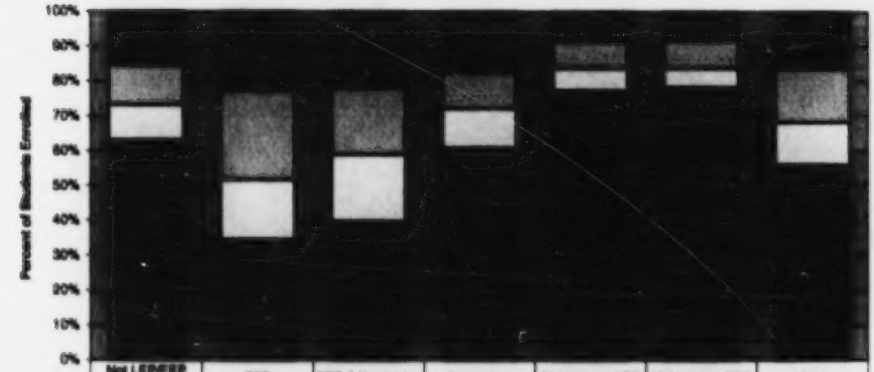
The postal zip code data presented in Table V.8 indicate that enrollment in each of the different instructional programs is dispersed throughout the District. Zip code 92701 has somewhat elevated TBE and Immersion program enrollments, and zip code 92707 has relatively high mainstream and English only enrollments, but no zip code neighborhood has fewer than a third of its students receiving mainstream educational services, and none has fewer than a third in TBE and/or Immersion programs.

Table V.8: Student Zip Code Neighborhoods by ELD Program Services

		Program defined language services provided												Group Total	
		Not LEP/FEP Proficiency		TBE		TBE & Immersion		Immersion		Mainstream LEP		Mainstream FEP			
		Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Recoded Zips 92701-92707 + Othr	92701	1277	11.3%	4353	38.6%	1139	10.1%	1589	14.1%	1744	15.5%	1176	10.4%	11278	100.0%
	92702	6	18.8%	10	31.3%	4	12.5%	4	12.5%	4	12.5%	4	12.5%	32	100.0%
	92703	1154	12.9%	3231	36.2%	1119	12.5%	1210	13.5%	1268	14.2%	955	10.7%	8937	100.0%
	92704	2620	19.1%	3537	25.8%	1167	8.5%	1891	13.8%	2240	16.4%	2242	16.4%	13697	100.0%
	92705	103	20.4%	147	29.1%	33	6.5%	74	14.7%	105	20.8%	43	8.5%	505	100.0%
	92706	1208	26.6%	1495	33.0%	442	9.7%	461	10.2%	453	10.0%	476	10.5%	4535	100.0%
	92707	2770	21.4%	3092	23.9%	1108	8.6%	1812	14.0%	1970	15.2%	2184	16.9%	12936	100.0%
	All Others	373	39.1%	252	26.4%	47	4.9%	69	7.2%	82	8.6%	131	13.7%	954	100.0%
Group Total		9509	18.0%	16117	30.5%	5059	9.6%	7110	13.4%	7866	14.9%	7213	13.6%	52874	100.0%

Enrollment in various types of language development programs is rather highly correlated with whether schools are on year round calendars, and which calendar cycle a student is enrolled in. As depicted in the chart accompanying Table V.9, traditional calendar schools are much more likely to serve mainstream students (those who are native English speakers, those who have reached fluency and those who are receiving their language instruction using mainstream instructional strategies). Transitional program students are particularly likely to be attending year round calendar schools, and are more likely to be enrolled in Cycle C than are other students.

ELD Program Enrollment by School Calendar



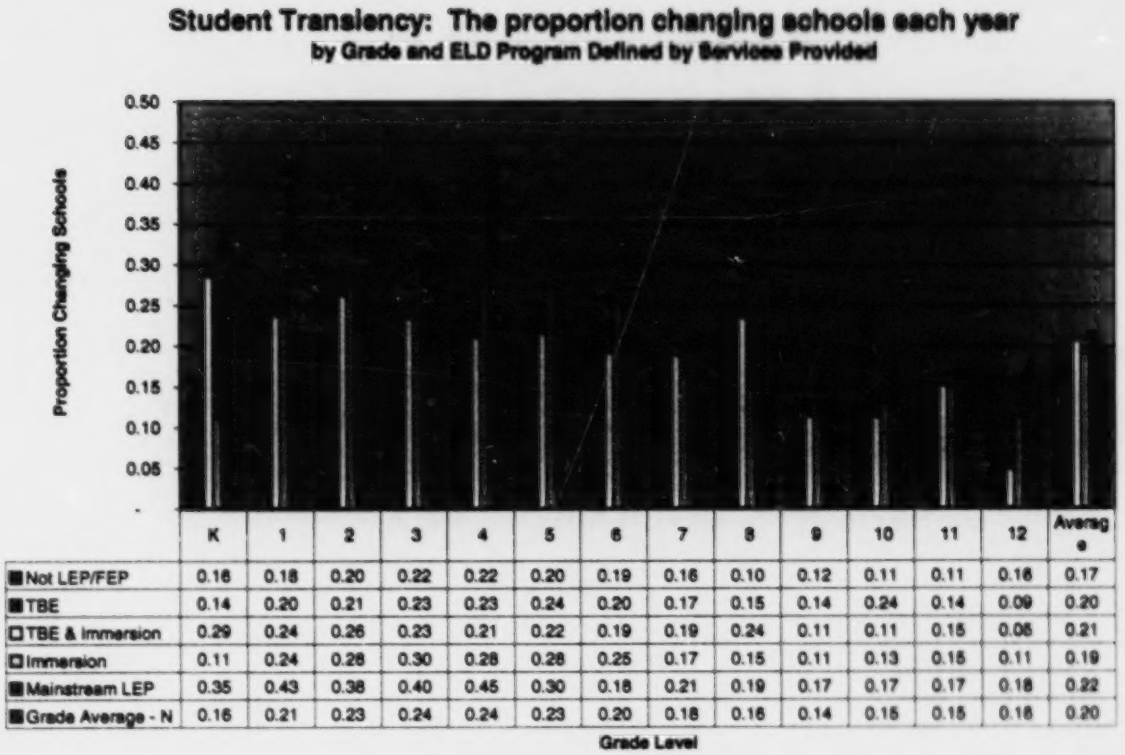
	Not LEP/FEP Proficiency	TBE	TBE & Immersion	Immersion	Mainstream LEP	Mainstream FEP	Total
Cycle D	1394	3614	1084	1293	885	591	8472
Cycle C	1014	4038	994	732	804	560	7902
Cycle B	938	3726	986	807	514	396	6347
Cycle A	868	2993	982	859	427	419	6178
Traditional	4789	2432	1103	3809	5822	5141	22996

ELD Program

Table V.9: Year Round School Cycles by ELD Program Services

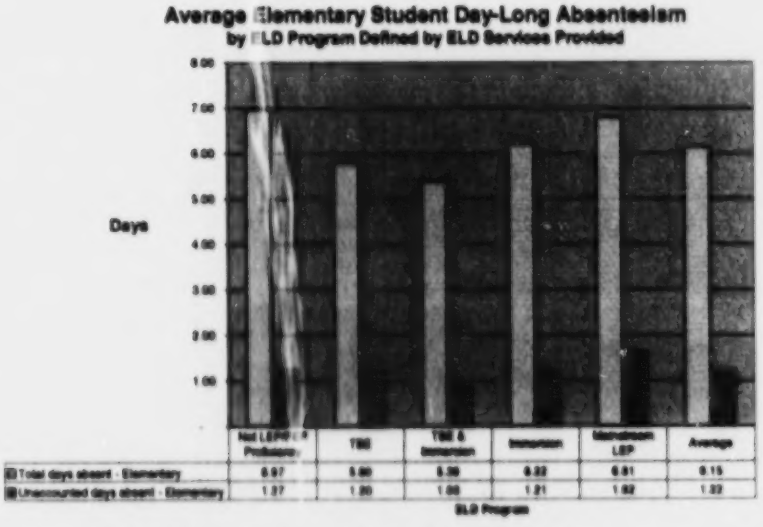
School Attendance Factors. Five variables bearing on student attendance and participation in school are available for analysis. The first is the transiency of students from school to school. While the average transiency rate does not differ substantially across ELD programs, there are very substantial differences during the early elementary years. As shown in the chart accompanying Table V.10, during the first four years of school students who are assigned to mainstream LEP programs are nearly twice as likely to move from school to school as are those who are in TBE programs and those whose native language is English. Students who move frequently are also more likely to be ones who receive mixed TBE and Immersion programs – no doubt because of the substantial differences in the prevalence of these programs at various school sites.

The second aspect of student attendance on which data are available has to do with absences. As shown in Tables V.11 and V.12, the tendency to miss school is not evenly distributed across the ELD program settings. Students who are assigned to TBE programs (either completely or in combination with Immersion instructional programs) have significantly fewer absences from school at both the elementary (where absences are recorded only in days) and secondary schools (where absences are recorded in periods and days – the days were converted to periods for this table). The improved attendance in these programs applies to both excused and unexcused absences.



	K	1	2	3	4	5	6	7	8	9	10	11	12	Average
Not LEP/FEP	0.16	0.18	0.20	0.22	0.22	0.20	0.19	0.16	0.10	0.12	0.11	0.11	0.16	0.17
TBE	0.14	0.20	0.21	0.23	0.23	0.24	0.20	0.17	0.15	0.14	0.24	0.14	0.09	0.20
TBE & Immersion	0.29	0.24	0.26	0.23	0.21	0.22	0.19	0.19	0.24	0.11	0.11	0.15	0.05	0.21
Immersion	0.11	0.24	0.28	0.30	0.28	0.28	0.25	0.17	0.15	0.11	0.13	0.15	0.11	0.19
Mainstream LEP	0.35	0.43	0.38	0.40	0.45	0.30	0.18	0.21	0.19	0.17	0.17	0.17	0.18	0.22
Grade Average - N	0.16	0.21	0.23	0.24	0.24	0.23	0.20	0.18	0.16	0.14	0.15	0.15	0.16	0.20

Table V.10: The Movement of Students from School to School



	Not LEP/FEP / R Proficient	TBE	TBE & Immersion	Immersion	Mainstream LEP	Average
Total days absent - Elementary	6.97	5.80	5.39	6.32	6.81	6.15
Unexcused days absent - Elementary	1.37	1.20	1.08	1.21	1.92	1.33

Table V.11: Elementary School Absences

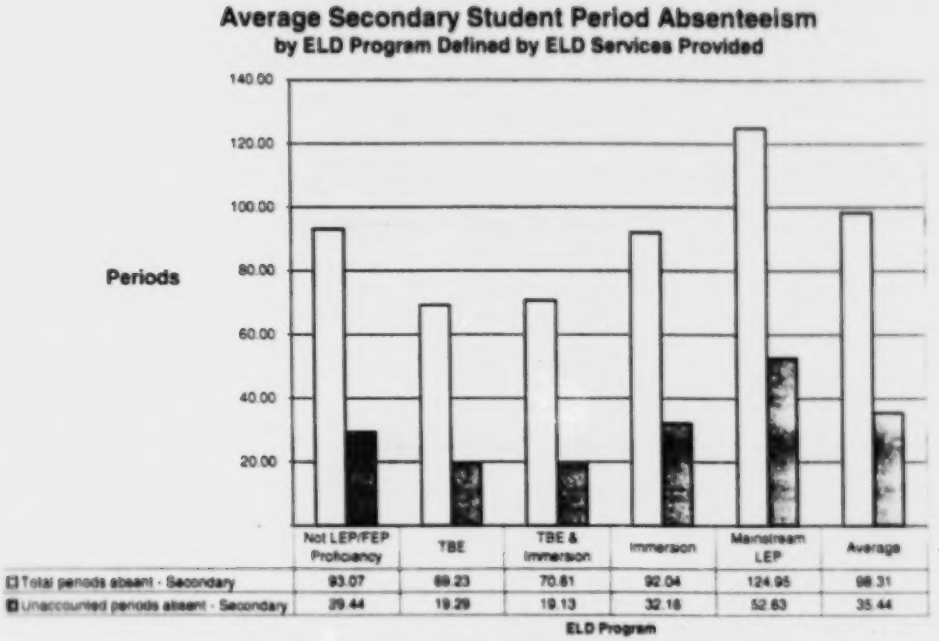


Table V.12: Secondary School Absences

A third dimension of school attendance is tardiness to class. Table V.13 reports the rate of daily tardiness for elementary students and of period tardiness for secondary students. Elementary tardiness is lowest in mainstream LEP instructional programs, while that is the program with the highest tardiness rate among secondary students. Tardiness is more frequent at the lower grade levels (K-2 in elementary schools and in the 6-8 intermediate grades).

Table V.13: Tardiness at all Grade Levels

Tardiness by Grade and ELD Program defined language services provided								
Grade	Unit of Recording	Not LEP/FEP	TBE	TBE & Immersion	Immersion	Mainstream LEP	Mainstream FEP	Grade Average
K	Days	2.45	2.27	4.65	2.83	2.06	3.02	2.42
1	Days	3.80	2.59	3.33	3.89	2.33	4.20	3.09
2	Days	3.75	2.24	1.97	3.20	2.14	3.74	2.71
3	Days	2.99	1.88	2.15	3.08	1.77	3.04	2.30
4	Days	2.55	1.74	2.21	2.06	1.99	2.55	2.08
5	Days	2.53	1.54	2.07	1.95	1.70	2.30	1.97
6	Periods	5.73	5.66	5.72	5.22	6.12	4.34	5.49
7	Periods	8.36	7.04	8.24	7.77	8.61	6.72	7.81
8	Periods	7.31	6.26	7.08	7.57	9.43	7.04	7.90
9	Periods	3.90	4.34	4.38	4.25	4.72	3.92	4.30
10	Periods	5.08	7.47	4.87	6.11	6.43	5.19	5.84
11	Periods	6.21	5.20	6.65	6.50	7.08	6.93	6.75
12	Periods	5.77	4.34	6.94	5.82	6.73	5.90	6.13
Avg	Days Elementary	2.99	2.13	2.24	2.87	2.05	3.15	2.47
Avg	Periods Secondary	6.10	6.00	6.52	6.17	6.96	5.71	6.30

The fourth aspect of school attendance variation is seen in the extent to which students do not start their Kindergarten level education in Santa Ana USD. As shown in the chart accompanying Table V.14, students who enter SAUSD sometime after their Kindergarten year are much more likely to be assigned to a mainstream or Immersion program. Students enrolled in TBE and combination TBE and Immersion programs are much more likely to be drawn from the population which starts formal schooling in Santa Ana.

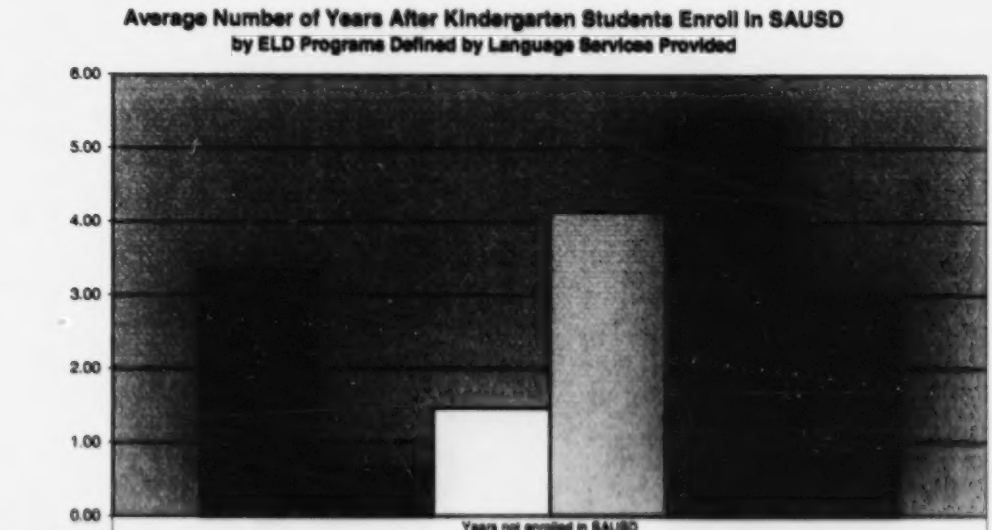


Table V.14: Frequency of Delayed Entry into SAUSD Schools

The final indicator suggesting that student attendance and engagement in schooling differs substantially across the ELD program designs is the frequency with which students are overage for their grade assignment. Using birth dates we can calculate the expected grade level to which students should be assigned, and thus determine whether students are either retained in grade or placed in a lower grade due to lagging development at the time of entry into SAUSD schools. The data displayed and charted on Table V.15 chart reveal that LEP students receiving their language development services in Mainstream programs are much more likely to be overage for their grade assignment than are students in TBE or TBE and Immersion programs. English only students have an overage for grade rate that is slightly below the district average for all students, while Immersion students have a rate that is substantially above average.

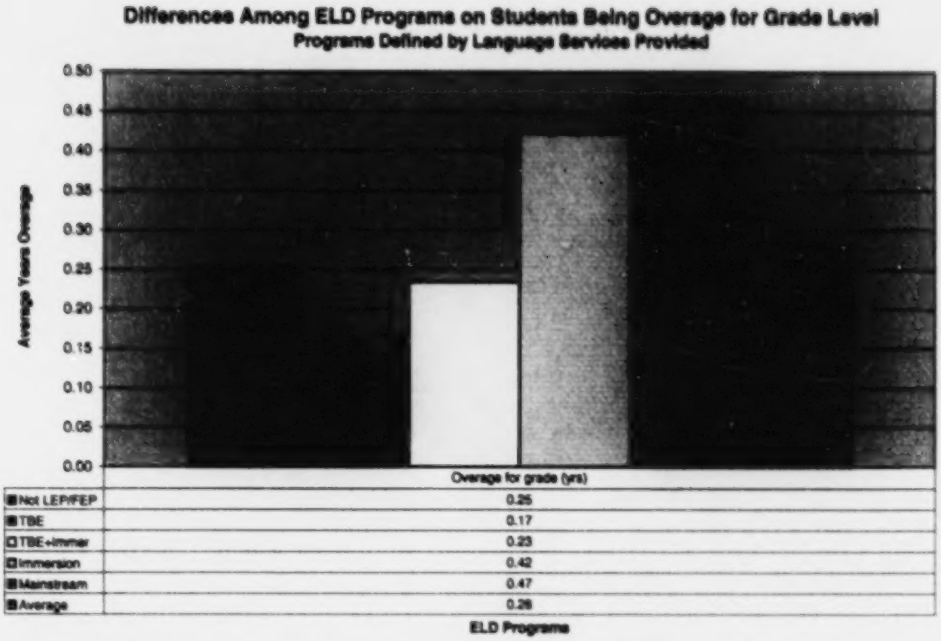


Table V.15: Frequency of Students Being Overage for Grade

Teacher Characteristics. Teachers as well as students are not randomly distributed among the various ELD instructional programs at Santa Ana USD. As shown in Table V.16, the teachers providing Transitional Bilingual instruction are much younger than those whose instructional work follows the mainstream or Immersion approaches to English language development.

As expected, the experience profile for SAUSD teachers follows closely their age. As shown in Table V.17, the least experienced teachers are providing TBE services while the most experienced are providing Immersion instruction.

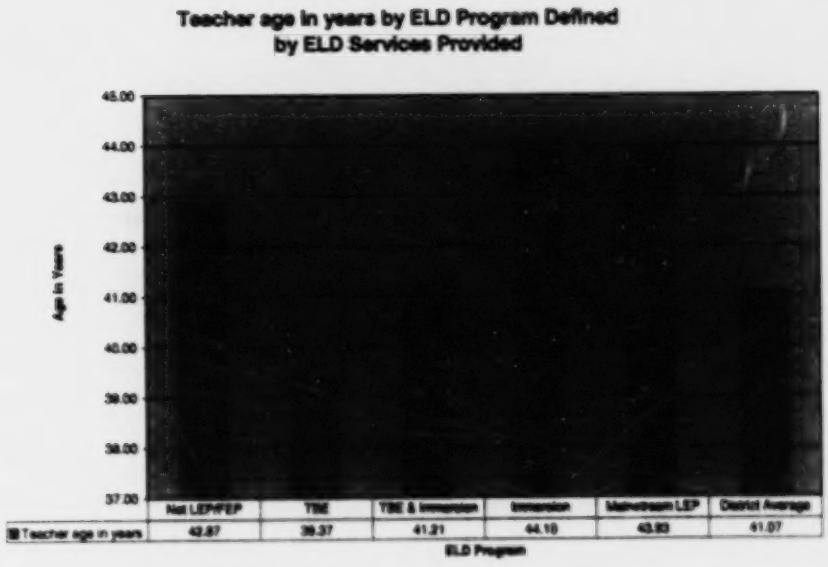


Table V.16: Teacher Age Distribution

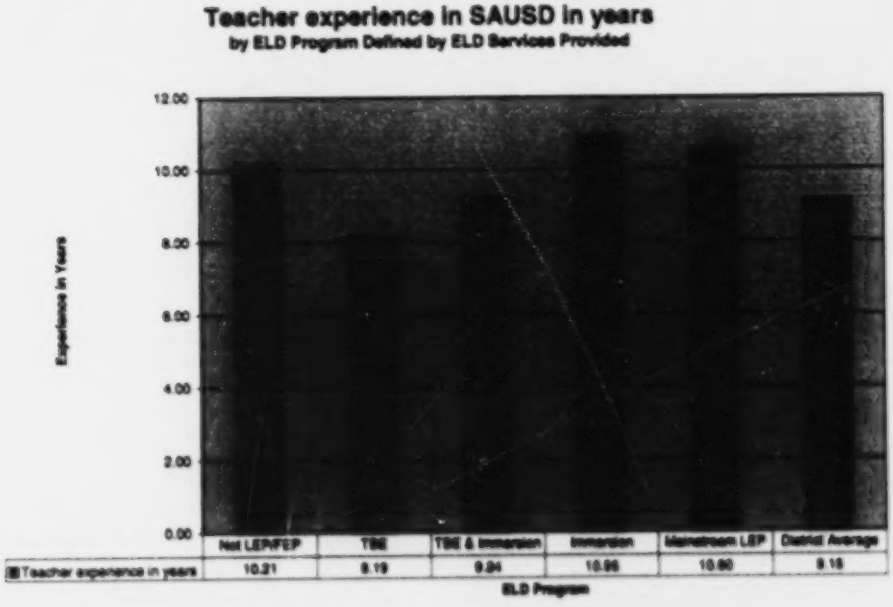


Table V.17: SAUSD Teacher Experience

Teacher gender also varies significantly across ELD program types. While just about 50 percent of the teaching work force is male and 50 percent female, fully 75 percent of all TBE teachers are female, while 84 percent of those providing mainstream instructional programs for LEP students are male (see Table V.18).

Teacher gender by ELD Program Defined by ELD Services Provided

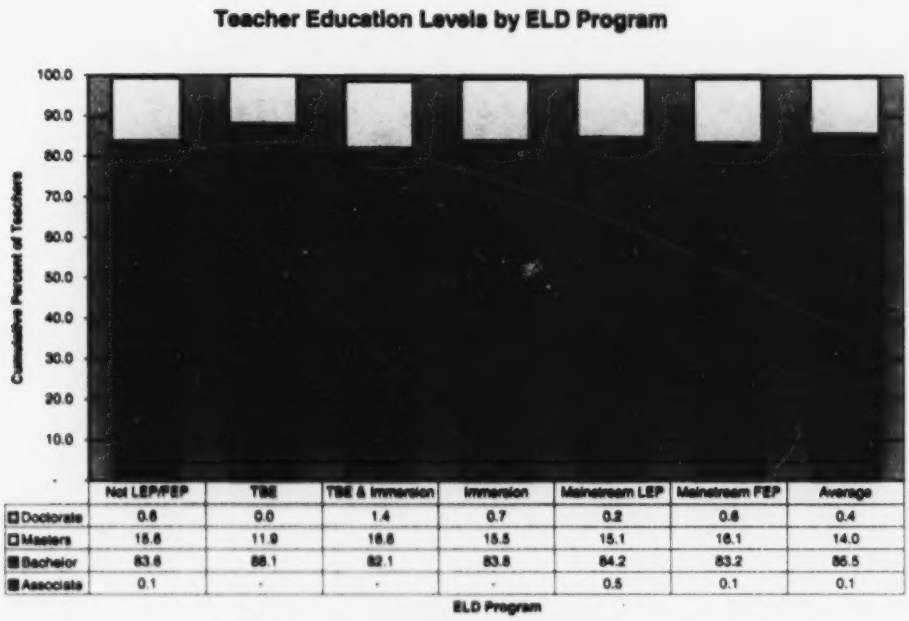
	Not LEP/FEP	TBE	TBE & Immersion	Immersion	Mainstream LEP	District Average
Percent Female	53%	75%	46%	33%	16%	50%

ELD Program

Table V.18: Teacher Gender

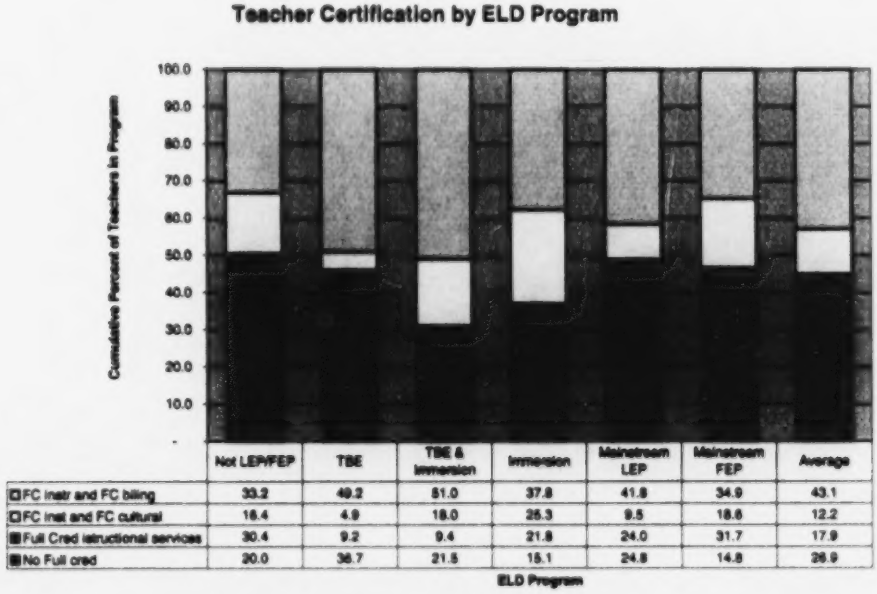
When it comes to education, there is not a lot of variation across the teaching staff. More than eight of ten teachers hold a bachelors degree while nearly 15 percent have masters degrees. Less than one half of one percent hold either less than a bachelor degree or more than a masters.

There are some modest differences in the instructional practices of teachers with and without the masters degree. In keeping with their younger age and fewer years of working experience, only about 11.9 percent of the TBE teachers hold masters degrees while all other instructional programs have more than the district wide average of 14 percent masters degree holders among their ranks (see Table V.19).



	Not LEP/FEP	TBE	TBE & Immersion	Immersion	Mainstream LEP	Mainstream FEP	Average
Doctorate	0.6	0.0	1.4	0.7	0.2	0.6	0.4
Masters	15.6	11.9	16.6	15.5	15.1	16.1	14.0
Bachelor	83.6	88.1	82.1	83.8	84.2	83.2	85.5
Associate	0.1	-	-	-	0.5	0.1	0.1

Table V.19: Teacher Education Levels



	Not LEP/FEP	TBE	TBE & Immersion	Immersion	Mainstream LEP	Mainstream FEP	Average
FC instr and FC billing	33.2	49.2	51.0	37.8	41.8	34.9	43.1
FC inst and FC cultural	16.4	4.9	18.0	25.3	9.5	18.6	12.2
Full Cred istructional services	30.4	9.2	9.4	21.8	24.0	31.7	17.9
No Full cred	20.0	36.7	21.5	15.1	24.8	14.8	26.9

Table V.20: Teacher Certification

As shown in Table V.20, there is a greater difference in the distribution of credential types than in the distribution of educational degrees. Interestingly, TBE program teachers are the most diverse group. The have both the largest percentage of bi-lingually certificated and the second largest percentage of not yet fully certified teachers. Among teachers serving LEP students, the Immersion teachers are least likely to hold full bilingual credentials, but they are also least likely to be less than fully certified to teach.

Having summarized the overall character of the Santa Ana USD student body and provided a little information about the teachers who serve them, we turn now to providing direct answers to the central study questions addressed in this program evaluation.

VI. Answering the Major Evaluation Study Questions

We turn now to the central evaluation questions in this study. How is English language development being pursued in SAUSD classrooms, and what impact do these language development techniques have on English (or primary language) fluency, reading and math achievement, and participation in schooling?

Instructional Techniques Used in ELD Programs

For children in kindergarten through grade 5, the District's annual survey collects a substantial body of information on the instructional services provided within various ELD program options. Indeed, as described previously, the differences in the way reading is taught provide the most reliable indicators of whether children are in Transitional Bilingual Education or Immersion programs.

Table VI.1: Instructional Language Use

Reading Instructional Language by Grade by ELD Program										
		TBE		TBE & Immersion		Immersion		Mainstream LEP		Total
Grade	Language	Count	Col%	Count	Col%	Count	Col%	Count	Col%	Count
K	Native	2,424	100%	21	46%					2445
	Transitional			1	2%	32	7%	84	100%	119
	Immersion			23	50%	407	93%			430
	Mainstream			1	2%					1
	Grade Total	2,424	100%	46		439		84		2995
1	Native	2,973	100%	163	82%					3136
	Transitional	5	0%	14	7%	110	22%	104	100%	237
	Immersion			23	12%	379	78%			402
	Mainstream	3	0%							3
	Grade Total	2,981		200		489		104		3778
2	Native	2,661	100%	269	85%					2930
	Transitional	5	0%	17	5%	357	69%	60	100%	450
	Immersion			28	9%	160	31%			188
	Mainstream	6	0%	3	1%					9
	Grade Total	2,672		317		517		60		3577
3	Native	2,333	98%	353	88%					2686
	Transitional	12	1%	27	7%	358	78%	79	100%	505
	Immersion			16	4%	102	22%			118
	Mainstream	44	2%	7	2%					51
	Grade Total	2,389		403		460		79		3360
4	Native	1,562	91%	707	85%					2269
	Transitional	45	3%	51	6%	354	81%	75	100%	564
	Immersion			45	5%	81	19%			126
	Mainstream	106	6%	25	3%					131
	Grade Total	1,713		828		435		75		3090
5	Native	976	71%	616	60%					1592
	Transitional	201	15%	193	19%	354	85%	88	100%	895
	Immersion			163	16%	64	15%			227
	Mainstream	199	14%	54	5%					253
	Grade Total	1,376		1,026		418		88		2967
All Grades	Native	12,929	95%	2,129	75%	-		-		15,058
	Transitional	268	2%	303	11%	1,565	57%	490	100%	2,770
	Immersion	-		298	11%	1,193	43%	-		1,491
	Mainstream	358	3%	90	3%	-		-		448
	Total All	13,555		2,820		2,758		490		19,767

Table VI.1 shows the distribution of reading language techniques across the elementary grades. As expected, this table reports that 95 percent of all TBE students are receiving reading instruction in their native language. Notice, however, that this begins with 100 percent in the Kindergarten and drops off significantly to only about 70 percent by grade 5. Students who are classified as mixed TBE and Immersion received mixed reading instruction. Overall, however, three-quarters of these students receive reading instruction in their native language. Children in Immersion programs are reported to be receiving more mixed reading programs than might be expected. While 93 percent of these children receive Immersion instruction in the Kindergarten and nearly 80 percent in grade 1, over the entire elementary school experience they are at least as likely to receive Transitional as Immersion instruction in reading. The Mainstream LEP students for whom data are available are reported to be receiving reading instruction using Transitional English language techniques – not the Mainstream techniques which might have been expected. In fact, among the nearly 20,000 LEP students for whom these data are available, only 448 (about 2 percent) are reported to be reading in the mainstream.

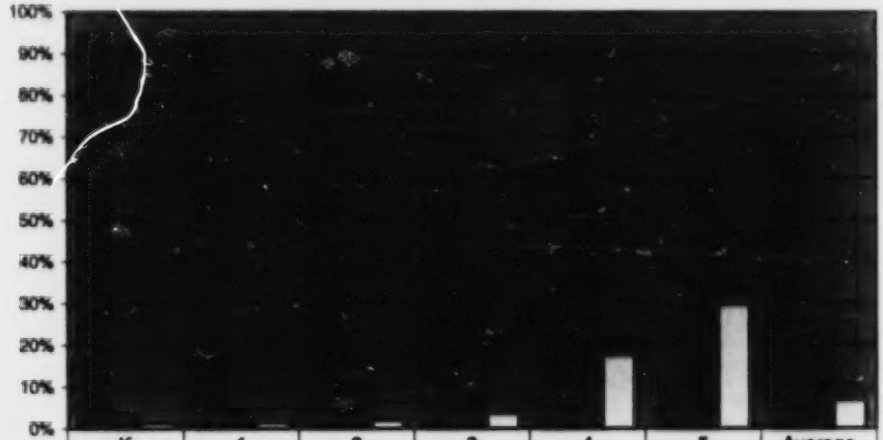
Table VI.2 reports the language development techniques used for language arts instruction. In this, as in other subject areas, "Transitional" and "Immersion" approaches to sheltering children's language development are not distinguished. Rather, in all subjects but reading, teachers were asked to characterize instruction as being conducted as either "Native," "Sheltered," or "Mainstream."

Table VI.2: ELD Approaches in Language Arts Instruction

		TBE		TBE & Immersion		Immersion		Mainstream LEP		Total
Grade	Language	Count	Col%	Count	Col%	Count	Col%	Count	Col%	Count
K	Native	2,279	95%	6	13%	2	0%	22	20%	2,309
	Sheltered	85	4%	37	80%	409	93%	7	6%	538
	Mainstream	33	1%	3	7%	30	7%	81	74%	149
	Grade Total	2,397		46		441		110		2,996
1	Native	2,794	94%	87	44%	2	0%	4	4%	2,887
	Sheltered	131	4%	79	40%	378	77%	6	5%	594
	Mainstream	47	2%	32	16%	112	23%	103	91%	298
	Grade Total	2,972		198		492		113		3,779
2	Native	2,325	87%	103	32%	10	2%			2,438
	Sheltered	298	11%	161	51%	318	60%	5	8%	783
	Mainstream	55	2%	53	17%	202	38%	58	92%	378
	Grade Total	2,678		317		530		63		3,599
3	Native	1,323	55%	106	26%		#VALUE!	2	2%	1,431
	Sheltered	975	41%	251	62%	275	58%	4	5%	1,507
	Mainstream	88	4%	46	11%	197	42%	77	93%	435
	Grade Total	2,386		403		472		83		3,373
4	Native	438	26%	41	5%					479
	Sheltered	966	57%	634	76%	216	48%	10	13%	1,833
	Mainstream	302	18%	154	19%	230	52%	66	87%	784
	Grade Total	1,706		829		446		76		3,096
5	Native	164	12%	18	2%					182
	Sheltered	802	58%	658	64%	199	47%	7	8%	1,669
	Mainstream	411	30%	350	34%	227	53%	84	92%	1,125
	Grade Total	1,377		1,026		426		91		2,976
All Grades	Native	9,323	69%	1,149	49%	460	18%	104	19%	12,343
	Sheltered	3,257	24%	1,204	51%	1,579	61%	29	5%	5,273
	Mainstream	936	7%	1,142	49%	967	37%	410	75%	4,054
	Total All	13,516		2,340		2,588		544		17,848

Close study of Table VI.2 will reveal that Native Language instruction is utilized almost exclusively in the Transitional Bilingual and combined TBE & Immersion programs. Additionally, as Table VI.3 and the attached chart show, the use of Native Language services drops dramatically starting in grade 3. By the 5th grade, fewer than one TBE student in eight is using native language during language arts instruction.

Instructional Language Used In Language Arts Instruction In TBE Program by Grade



	K	1	2	3	4	5	Average
Native	95%	94%	87%	55%	26%	12%	69%
Sheltered	4%	4%	11%	41%	57%	58%	24%
Mainstream	1%	2%	2%	4%	18%	30%	7%

Table VI.3: Instructional Language Use during Language Arts Instruction

Tables VI.4, VI.5 and VI.6 report the language development approaches used for mathematics, science and social studies instruction, respectively. In each case, the tables confirm the general picture presented in the case of language arts instruction. Very little native language instruction is used outside the Transitional Bilingual programs, and there is a sharp decline in native language instruction for all children starting in the second or third grade. By grade 5 native language instruction is used for subject matter instruction in fewer than 10 percent of the classrooms. At the same time fewer than 50 percent of all children are reading at grade level by the end of grade 2.

Table VI.4: Instructional Language Use in Math Instruction

Mathematics Instructional Language by Grade by ELD Program										
		TBE		TBE & Immersion		Immersion		Mainstream LEP		Total
Grade	Language	Count	Col%	Count	Col%	Count	Col%	Count	Col%	Count
K	Native	2,307	93%	1	2%	5	1%	22	20%	2,335
	Sheltered	129	5%	37	80%	406	92%	5	4%	577
	Mainstream	34	1%	8	17%	32	7%	85	76%	161
	Grade Total	2,470		46		443		112		3,073
1	Native	2,411	81%	35	18%	1	0%	4	4%	2,451
	Sheltered	518	17%	129	65%	366	74%	6	5%	1,019
	Mainstream	52	2%	34	17%	125	25%	103	91%	318
	Grade Total	2,981		198		492		113		3,788
2	Native	1,687	63%	48	15%	10	2%			1,745
	Sheltered	914	34%	205	64%	317	60%	4	6%	1,441
	Mainstream	88	3%	65	20%	205	39%	59	94%	427
	Grade Total	2,689		318		532		63		3,613
3	Native	660	28%	35	9%			1	1%	696
	Sheltered	1,595	67%	307	76%	267	56%	5	6%	2,176
	Mainstream	135	6%	61	15%	206	44%	77	93%	506
	Grade Total	2,390		403		473		83		3,378
4	Native	273	16%	13	2%	1	0%			287
	Sheltered	1,156	68%	656	79%	215	48%	10	13%	2,044
	Mainstream	279	16%	160	19%	230	52%	66	87%	768
	Grade Total	1,708		829		446		76		3,099
5	Native	135	10%	4	0%					139
	Sheltered	824	60%	641	62%	186	44%	5	5%	1,656
	Mainstream	423	31%	381	37%	241	56%	87	95%	1,186
	Grade Total	1,382		1,026		427		92		2,983
All Grades	Native	7,473	55%	136	5%	17	1%	27	5%	7,653
	Sheltered	5,136	38%	1,975	70%	1,757	62%	35	6%	8,915
	Mainstream	1,011	7%	709	25%	1,039	37%	477	88%	3,366
	Total All	13,620		2,820		2,813		539		19,934

Table VI.5: Instructional Language Use in Science Instruction

Science Instructional Language by Grade by ELD Program										
		TBE		TBE & Immersion		Immersion		Mainstream LEP		Total
Grade	Language	Count	Col%	Count	Col%	Count	Col%	Count	Col%	Count
K	Native	2,213	92%	1	2%	5	1%	22	20%	2,241
	Sheltered	153	6%	42	91%	403	92%	6	5%	604
	Mainstream	33	1%	3	7%	32	7%	82	75%	152
	Grade Total	2,399		46		440		110		2,997
1	Native	2,216	74%	24	12%	1	0%	1	1%	2,242
	Sheltered	706	24%	140	71%	372	76%	6	5%	1,224
	Mainstream	55	2%	34	17%	118	24%	103	94%	314
	Grade Total	2,977		198		491		110		3,780
2	Native	1,473	55%	47	15%	10	2%			1,530
	Sheltered	1,113	41%	202	64%	314	59%	5	8%	1,635
	Mainstream	102	4%	69	22%	207	39%	58	92%	446
	Grade Total	2,688		318		531		63		3,611
3	Native	576	24%	16	4%			1	1%	593
	Sheltered	1,685	71%	327	81%	288	61%	5	6%	2,307
	Mainstream	127	5%	60	15%	184	39%	76	93%	474
	Grade Total	2,388		403		472		82		3,374
4	Native	229	13%	7	1%					236
	Sheltered	1,205	71%	684	80%	228	51%	11	14%	2,115
	Mainstream	274	16%	158	19%	218	49%	65	86%	747
	Grade Total	1,708		829		446		76		3,098
5	Native	120	9%	2	0%					122
	Sheltered	839	61%	696	68%	203	48%	8	9%	1,748
	Mainstream	418	30%	328	32%	224	52%	84	91%	1,108
	Grade Total	1,377		1,026		427		92		2,978
All Grades	Native	6,827	50%	97	3%	16	1%	24	5%	6,964
	Sheltered	5,701	42%	2,071	73%	1,808	64%	41	8%	9,633
	Mainstream	1,009	7%	652	23%	983	35%	468	88%	3,241
	Total All	13,537		2,820		2,807		533		19,838

Table VI.6: Instructional Language Use in Social Studies Instruction

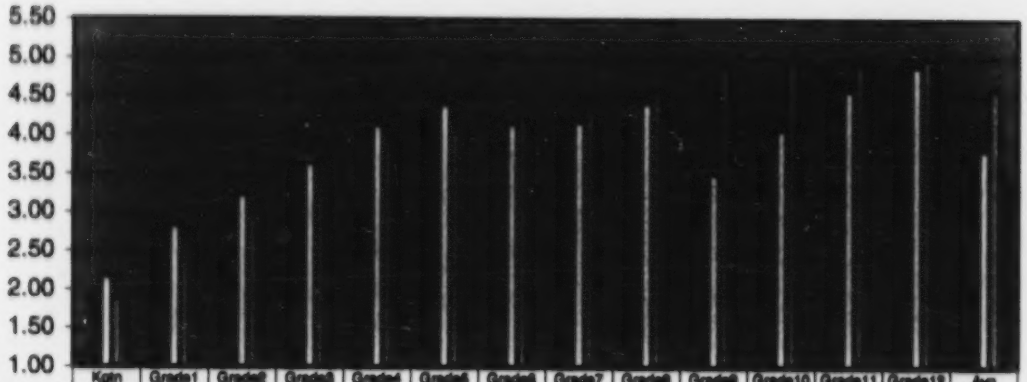
Social Studies Instructional Language by Grade by ELD Program										
		TBE		TBE & Immersion		Immersion		Mainstream LEP		Total
Grade	Language	Count	Col%	Count	Col%	Count	Col%	Count	Col%	Count
K	Native	2,177	91%	2	4%	5	1%	22	20%	2,206
	Sheltered	185	8%	40	89%	403	92%	7	6%	635
	Mainstream	33	1%	3	7%	32	7%	80	73%	150
	Grade Total	2,395		45		440		109		2,991
1	Native	2,195	74%	26	13%	1	0%	4	4%	2,226
	Sheltered	717	24%	136	69%	339	69%	6	5%	1,198
	Mainstream	63	2%	35	18%	149	30%	103	91%	354
	Grade Total	2,975		197		489		113		3,778
2	Native	1,426	53%	42	13%	10	2%			1,478
	Sheltered	1,174	44%	208	65%	318	60%	6	10%	1,707
	Mainstream	85	3%	68	21%	201	38%	57	90%	421
	Grade Total	2,685		318		529		63		3,606
3	Native	645	27%	42	10%			1	1%	688
	Sheltered	1,617	68%	302	75%	288	61%	4	5%	2,213
	Mainstream	121	5%	59	15%	184	39%	77	94%	468
	Grade Total	2,383		403		472		82		3,369
4	Native	273	16%	14	2%	1	0%			288
	Sheltered	1,153	68%	654	79%	219	49%	11	14%	2,044
	Mainstream	282	17%	160	19%	225	51%	65	86%	764
	Grade Total	1,708		828		445		76		3,096
5	Native	128	9%	2	0%					130
	Sheltered	856	62%	706	69%	203	48%	6	7%	1,774
	Mainstream	391	28%	318	31%	223	52%	86	93%	1,071
	Grade Total	1,375		1,026		426		92		2,975
All Grades	Native	6,844	51%	128	5%	17	1%	27	5%	7,016
	Sheltered	5,702	42%	2,046	73%	1,770	63%	40	7%	9,571
	Mainstream	975	7%	643	23%	1,014	36%	468	87%	3,228
	Total All	13,521		2,817		2,801		535		19,815

English Language Development Levels

Table VI.7, with its accompanying chart summarizes the level of English language development reached by SAUSD children across all grade levels (kindergarten to 12th). As shown graphically in the bar chart, English language development varies quite sharply across the SAUSD bilingual program types. It is particularly important to note that kindergarten children, on entry into each program do not bring the same level of English language ability into each program. While all LEP groups are in the early stages of English language acquisition, the students assigned to TBE programs are nearly a full level below those assigned to the other bilingual programs or left in the mainstream. The good news in this chart is that the TBE students make steady progress toward catching up with the language fluency of Immersion and Mainstream students during the first five years of schooling. By grade 5, TBE students are only about a third of a level below the Immersion and Mainstream students – still behind, but closing the gap by nearly half.

During the high school years (except for grade 9 where most of the new LEP high school students begin their work) most of the difference in English fluency across programs disappears. This may be the result of equalizing fluency attainment across groups, or it may be due to differential dropout rates across programs (the data do not presently allow us to tell).

English Language Development Levels in 1997
by ELD Program and Grade

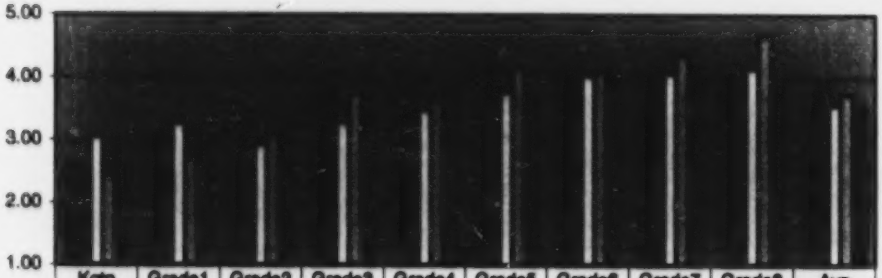


	Kgtn	Grade1	Grade2	Grade3	Grade4	Grade5	Grade6	Grade7	Grade8	Grade9	Grade10	Grade11	Grade12	Avg
TBE	1.23	1.94	2.46	3.02	3.41	3.81	3.86	3.79	3.20	4.09	4.34	4.80	5.00	2.96
TBE & Immersion	1.98	2.38	2.93	3.38	3.68	4.09	4.02	3.96	3.82	2.67	3.84	4.73	5.00	3.74
Immersion	2.18	2.84	3.24	3.66	4.14	4.42	4.16	4.19	4.44	3.52	4.08	4.59	4.90	3.82
Mainstream LEP	1.89	2.38	2.85	3.34	3.85	4.13	4.25	4.34	4.58	4.91	4.96	4.95	4.98	4.59
Grade Average	1.41	2.10	2.63	3.17	3.82	4.04	4.06	4.15	4.39	4.33	4.68	4.91	5.08	3.49

Table VI.7 English Language Development Levels by Program and Grade

Children's development in their primary non-English languages is depicted in Table VI.8 and its accompanying chart. (Data are too sparse after grade 8 to be reliable). As this table reveals,

Table VI.8: Average Primary Language Development Levels by Grade by ELD Program



	Kgtn	Grade1	Grade2	Grade3	Grade4	Grade5	Grade6	Grade7	Grade8	Avg
TBE	2.65	3.09	3.39	3.74	4.01	4.13	4.13	4.11	4.03	3.47
TBE & Immersion	2.64	3.01	3.35	3.84	4.01	4.18	4.18	4.18	3.64	3.97
Immersion	3.05	3.28	2.94	3.29	3.50	3.77	4.04	4.07	4.14	3.56
Mainstream LEP	2.46	2.78	3.08	3.76	3.84	4.18	4.11	4.36	4.67	3.73
Grade Average	2.68	3.09	3.34	3.72	3.96	4.12	4.15	4.19	3.97	3.59

children in Immersion programs begin school with greater than average fluency in their primary language, but by grade 2 fall somewhat below the District-wide average. All student groups make steady progress in their native languages so that by grade 6 all are reported to have reached intermediate fluency levels.

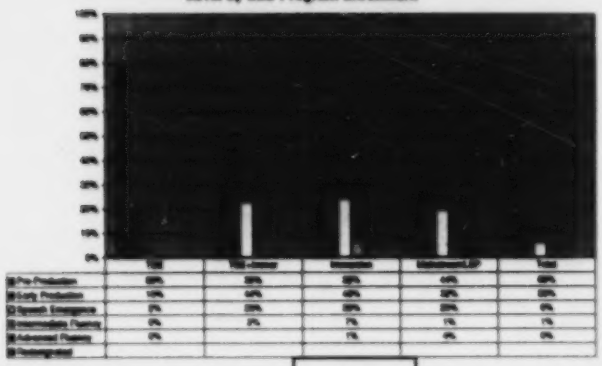
The six small charts on the next page (Tables VI.9a to VI.9f) provide a more detailed picture of the English Language development characteristic of children in each of the District ELD programs in kindergarten through grade 5. As these charts make clear, nearly 70 percent of all LEP children entering SAUSD are at the pre-production level in English. Only about 7 percent (one child in fifteen) have reached the speech emergence level. By the end of grade 1 nearly 50 percent of the students have reached the early production level. The speech emergence level is the most prevalent in both 2nd and 3rd grades, and few students get beyond intermediate fluency by the end of their fifth grade year. Immersion programs produce the largest number of students who are prepared for redesignation as Fluent English Proficient, but only about one LEP student in fifteen reaches redesignation before leaving elementary school.

As will be documented in more detail below, these data suggest that English fluency is very demanding and takes most students more years than they spend in their entire elementary education.

Table VI.10 provides a succinct summary of the language development of elementary age children in Santa Ana. The graph associated with this table shows that Mainstream LEP students have the highest language development levels in English, and are right behind the children who have received both TBE and Immersion instruction in their native language. ***It should be remembered that this graph does <u>not</u> indicate that no ELD program or a mixed program of TBE and Immersion are the most effective means of nurturing language proficiency. To the contrary, as data presented below will show, these programs have higher language attainment because they receive children whose language skills are higher to begin with. It is a tribute to the professional judgment of the SAUSD staff that children with the least language skill are the ones who are most often placed in the Transitional Bilingual Programs where native language services are most prevalent. Immersion programs both start and end with the highest functioning students. As will be shown shortly, both TBE and Immersion programs are superior to the Mainstream when it comes to assisting English language learners to reach higher levels of proficiency.***

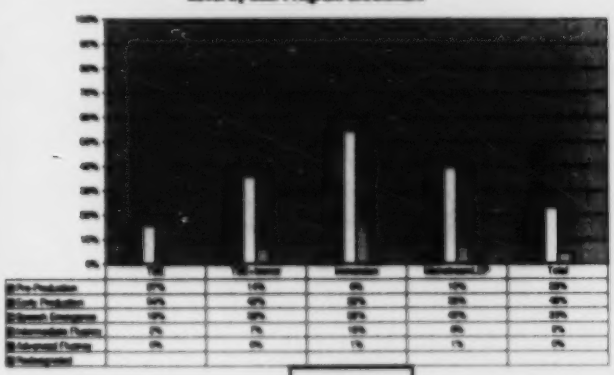
Tables VI.9a to VI.9f: English Language Proficiency by Grade Level

Percent of Kindergarten Students at Each Language Development Level by ELD Program Enrollment



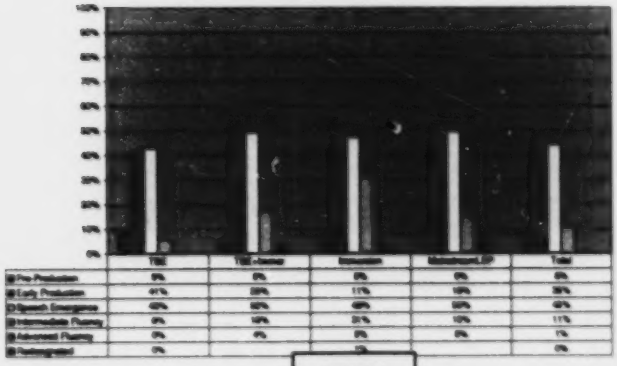
VI.9a

Percent of Grade 1 Students at Each Language Development Level by ELD Program Enrollment



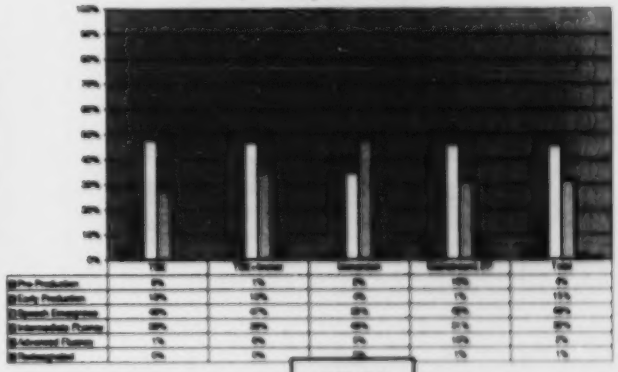
VI.9b

Percent of Grade 2 Students at Each Language Development Level by ELD Program Enrollment



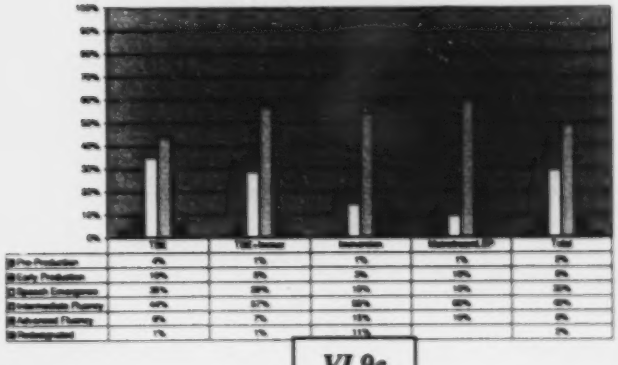
VI.9c

Percent of Grade 3 Students at Each Language Development Level by ELD Program Enrollment



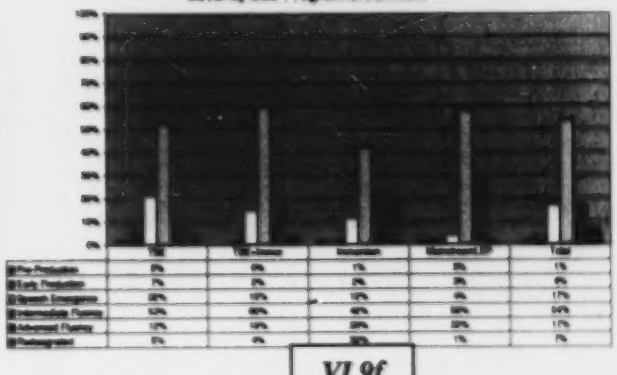
VI.9d

Percent of Grade 4 Students at Each Language Development Level by ELD Program Enrollment

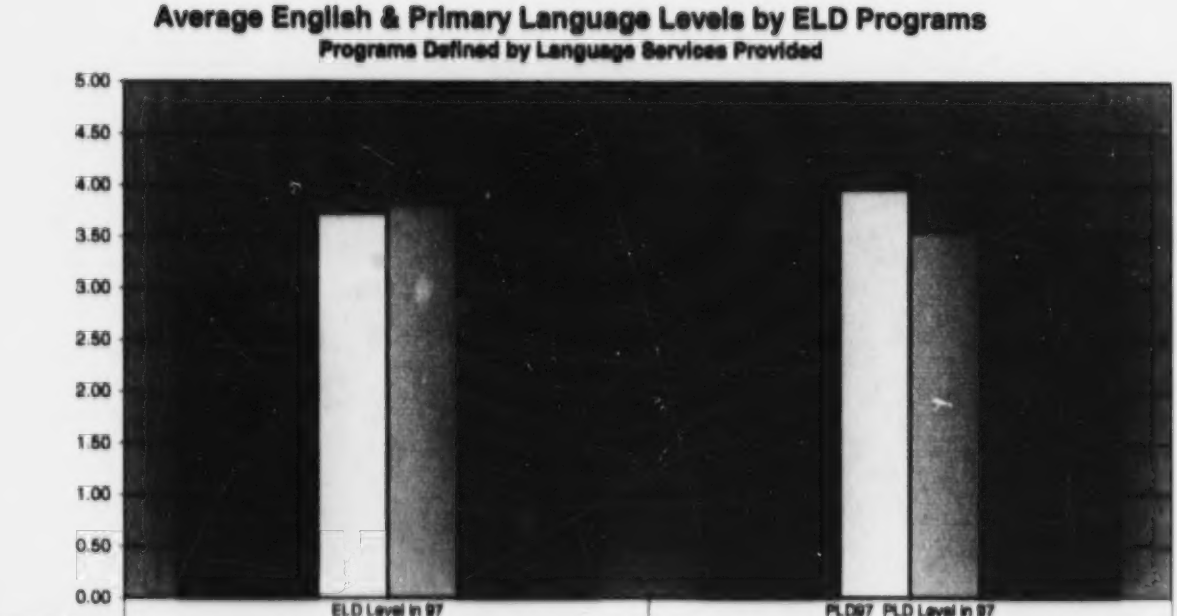


VI.9e

Percent of Grade 5 Students at Each Language Development Level by ELD Program Enrollment



VI.9f



	ELD Level in 97	PLD97 PLD Level in 97
Not LEP/FEP	3.00	3.00
TBE	2.66	3.47
TBE+Immer	3.74	3.97
Immersion	3.62	3.56
Mainstream	4.59	3.73
Average	3.42	3.58

Table VI.10: Average Language Development for All Elementary Students

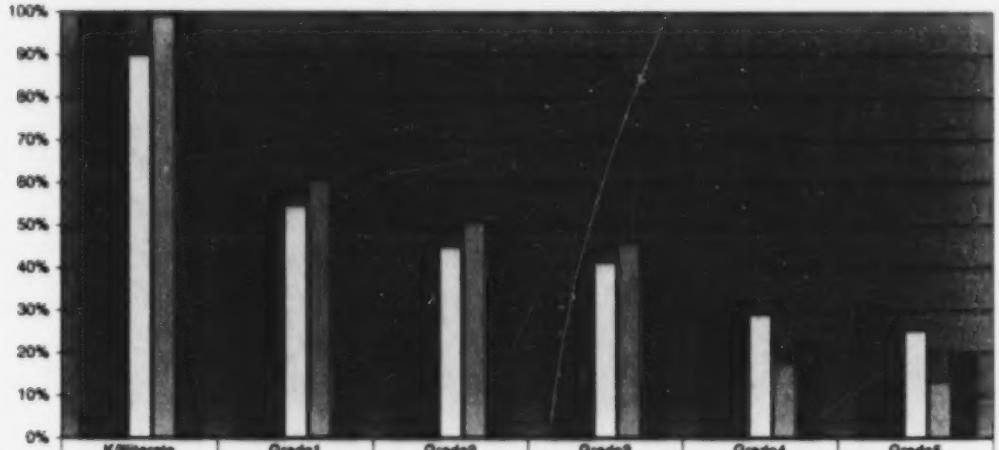
Grade Level Reading Attainment for ELD Students

In addition to evaluating student language development in English and in their primary language, teachers are asked to report on the District survey form the actual reading level at which each student is working. Table VI.11 provides an overall summary of these reports by presenting the proportion of each grade's students who are reading at or above grade level. The most important feature of this graph is the steady decline in grade-level reading ability among all student groups, regardless of the ELD program in which they may be enrolled. While all schools experience a gradual spreading out of the reading levels among students as they move through the grades, most schools have a substantial number of above grade level readers, as well as those who fall behind their classmates as the years go by. In SAUSD, however, teachers are reporting that almost all deviation from grade level reading involves falling behind rather than moving ahead.

Table VI.11 also shows that there are significant differences among the ELD programs with regard to the proportion of children reading at grade level. TBE programs are most effective in stemming the slide in reading performance during the first three years, when native language

instruction is being most widely used. Mainstream students have the toughest time. After starting out at or above the levels of the students assigned to specific ELD programs, they decline most rapidly, and have the fewest at-grade level readers by the second grade. In grades 4 and 5, Immersion and combined TBE and Immersion instructional strategies are proving most effective in supporting grade level reading attainment. These programs, however, offer no substantial improvement over mainstream programs which offer no ELD services during these upper elementary years. By fifth grade, the highest performing readers are in the mainstream programs.

Percent of Pupils Reading at Grade Level by Grade
by ELD Program defined by services provided



	K/Illiterate	Grade1	Grade2	Grade3	Grade4	Grade5
Mainstream	99%	60%	31%	33%	29%	32%
Immersion	99%	65%	38%	34%	32%	25%
TBE+Immer	90%	55%	45%	42%	29%	26%
TBE	99%	61%	51%	46%	18%	14%
Total	99%	61%	48%	44%	23%	20%

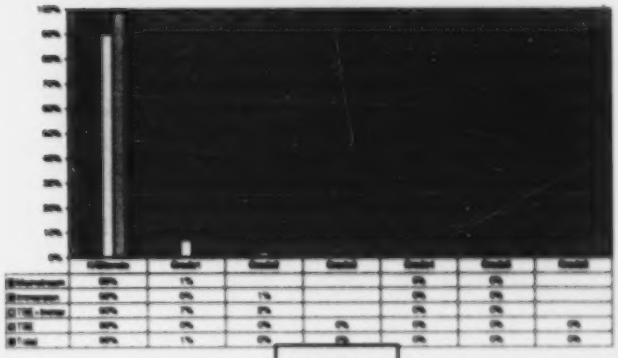
Table VI.11: Grade Level Reading Performance by ELD Program

The six small charts accompanying Tables VI.12a thruogh VI.12f provide detailed grade by grade look at the reading levels attained by all LEP students. As these graphs make abundantly clear, mainstream students languish badly during the first three years, with more than 20 percent of the mainstream students still reading at the kindergarten level when they complete grade 3.

TBE programs, which falter when students are moved into English instruction beginning with grades 3 or 4, nevertheless have the smallest number of students who fall three or more grade levels behind by the fifth grade.

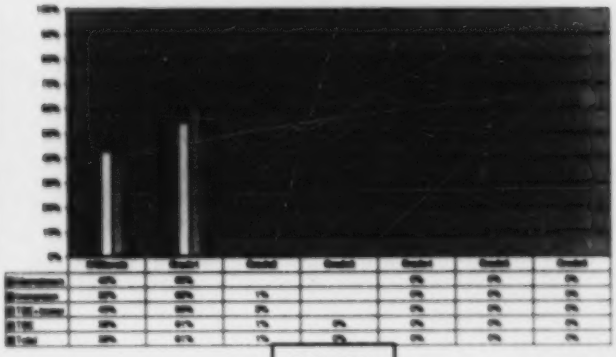
Tables VI.12a to VI.12f: Reading Levels at Each Elementary Grade Level by ELD Program

Percent of Kindergarten Students Reading at Each Grade Level by ELD Program



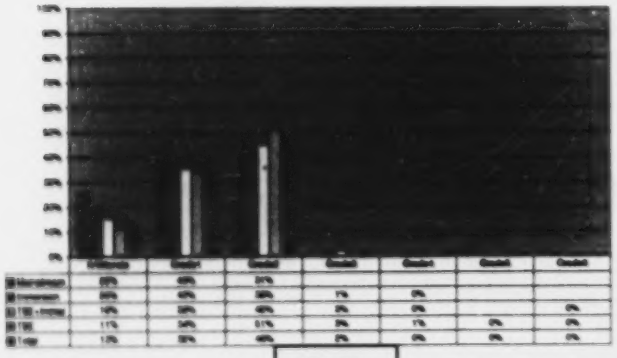
VI.12a

Percent of Grade 1 Students Reading at Each Grade Level by ELD Program



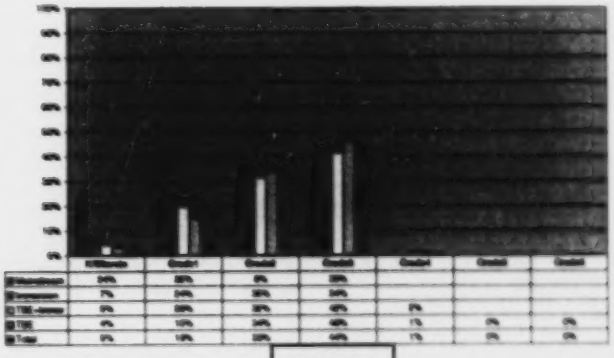
VI.12b

Percent of Grade 2 Students Reading at Each Grade Level by ELD Program



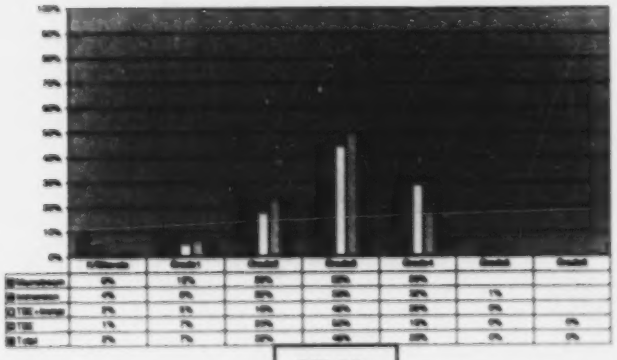
VI.12c

Percent of Grade 3 Students Reading at Each Grade Level by ELD Program



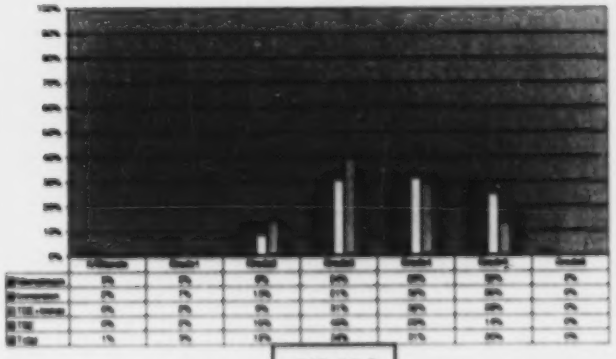
VI.12d

Percent of Grade 4 Students Reading at Each Grade Level by ELD Program



VI.12e

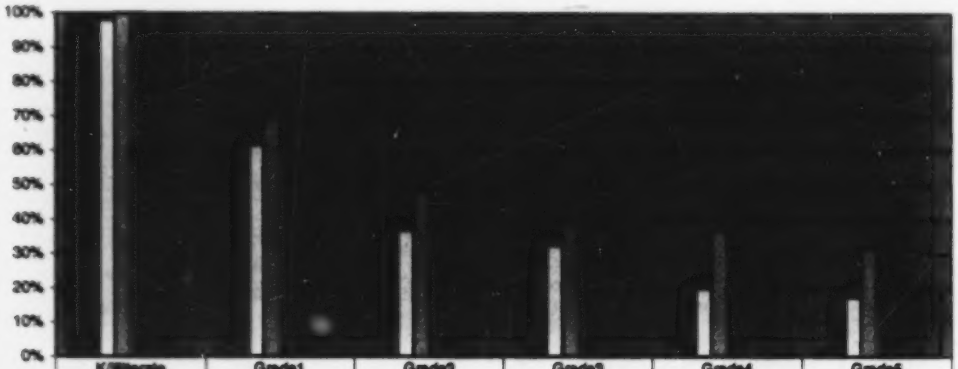
Percent of Grade 5 Students Reading at Each Grade Level by ELD Program



VI.12f

Because of the importance of this issue of grade-level reading attainment, we preformed a check on the distribution of reading levels attained during the elementary school years by grouping students according to their administrative program assignments (the V-Codes on the District Survey Form). Table VI.13 parallels Table VI.11 in presenting the proportion of each program group's students who are functioning at or above grade level in reading.

Percent of Students Reading at Grade Level
by V-Code Specified ELD Program



	K/Wiliterate	Grade1	Grade2	Grade3	Grade4	Grade5
TBE	99%	80%	51%	39%	9%	2%
TLC	99%	70%	50%	55%	19%	14%
Imm+Native	98%	62%	37%	33%	20%	17%
Imm+Other	100%	70%	48%	39%	37%	32%
Imm Only	100%	78%	44%	41%	46%	35%
Main+ELD	95%	42%	52%	56%	26%	45%
Mainstream	99%	60%	45%	41%	29%	20%
Total	99%	61%	48%	43%	23%	20%

Table VI.13: Grade Level Reading Attainment among Administrative Program Groups

The picture presented by this graph is quite similar to that found in Table VI.11 – a steady decline in reading level attainment, with TBE students doing very well through grade 3 and then dropping sharply in grades 4 and 5. The apparent bright spot in this graph is the strong performance by the "Immersion Only" students in grade 4 and the Mainstream plus ELD support group in grade 5. As noted earlier, however, many students in the mainstream groups are actually receiving TBE or Immersion instruction by teachers who are not fully credentialled – and when these students are reclassified according to the services they actually receive, those who are getting only mainstream services do not fare very well. Indeed, reclassifying these students raises the TBE performance and lowers the mainstream performance.

Achievement in Reading and Mathematics

We turn next to a review of reading and mathematics attainment among SAUSD students who participate in various English language development programs. As described in an earlier section of this report, comparing academic attainment levels among native speakers of diverse languages, across school grade levels and program assignments is far from a perfect science. Thus, the findings presented in this sub-section should be viewed cautiously and should be relied upon for policy making only when corroborated with other data.

Standardized achievement test scores for 1997 are available on about 30 thousand SAUSD students, with comparable numbers tested in previous years. Most LEP students begin by taking the Spanish language version of the District test (the SABE) and, as they become more fluent in English make the transition to the English CTBS version. Table IV.14 presents reading achievement NCE scores from both SABE and CTBS test versions, by grade level and by ELD program for all students (including the English only students who have never been classified as LEP and the non-native speakers classified as Fluent English Proficient (FEP)). As shown in the right hand column of Table IV.14, the number of SABE takers outnumbers those who take the English version of the examination until grade 4. From that point on, the percentage of students taking the CTBS version climbs steadily. The non-LEP/FEP students, of course, only take the English language CTBS, as do those LEP students whose native language is not Spanish.

While a more complete analysis of these scores will be presented below, we note a few important features of this table. First, the highest overall averages were produced by mainstream FEP students. High performance by this group should not be seen as remarkable, however, because students must score well on the District test in order to be redesignated from Limited to Fluent English Proficient. Since the bottom 25 to 33 percent of test takers remain classified among the LEP student groups until they bring up their scores it would be most unusual if the redesignated students did not score particularly well. What is important is that this group's average score (45.88) remains a bit below the expected mid-point on the two district tests (which is 50.00). We note that the next highest scores were earned by the TBE student group – a group which starts with the lowest language ability of all groups in the district. As later analysis will document, a major reason for the high average scores for this group is the frequency with which they take the Spanish language version of the test. Overall, students in Santa Ana score much better on the Spanish than on the English language version of the test.

The lowest achievement scores are those of the Immersion students, but they are closely clustered with the TBE & Immersion students and the Mainstream LEP students.

Table VI.14: Reading Achievement in NCE Scores Measured by the SABE and CTBS Tests by Grade and ELD Program defined language services provided

		Not LEP/FEP		TBE		TBE & Immersion		Immersion		Mainstream LEP		Mainstream FEP		Grade Level Averages	
Grade	Language	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N
1	SABE	.		58.06	2,649	56.04	109	34.00	2	49.11	123	59.79	29	57.61	2,912
	CTBS	38.53	638	27.15	47	28.12	66	28.48	436	32.68	124	39.97	326	34.95	1,637
	Average	38.53	638	57.52	2,696	45.51	175	28.51	438	40.86	247	41.59	355	49.48	4,549
2	SABE	.		51.91	2,366	49.24	162	54.33	6	48.00	46	55.91	23	51.72	2,603
	CTBS	38.17	559	27.93	54	28.06	124	30.08	456	28.24	74	41.58	316	34.92	1,583
	Average	38.17	559	51.38	2,420	40.06	286	30.40	462	35.82	120	42.55	339	45.36	4,186
3	SABE	.		53.99	1,863	52.17	157	16.00	3	55.11	37	59.29	14	53.85	2,074
	CTBS	43.01	522	35.33	330	32.66	201	33.54	411	34.10	100	45.73	297	38.39	1,861
	Average	43.01	522	51.18	2,193	41.22	358	33.41	414	39.77	137	46.34	311	46.54	3,935
4	SABE	.		48.83	745	50.50	185	27.33	3	44.05	20	46.00	1	48.99	954
	CTBS	39.17	509	25.85	846	26.03	594	28.19	387	27.82	85	41.70	317	30.59	2,738
	Average	39.17	509	36.61	1,591	31.84	779	28.19	390	30.91	105	41.71	318	35.34	3,692
5	SABE	.		40.95	291	40.20	87	71.00	1	41.00	7	.		40.86	386
	CTBS	39.61	539	24.94	1,005	25.36	890	29.43	393	28.35	97	45.74	384	30.49	3,308
	Average	39.61	539	28.54	1,296	26.68	977	29.54	394	29.20	104	45.74	384	31.58	3,694
6	SABE	.		30.72	144	26.05	135	19.61	31	24.14	21	.		27.36	331
	CTBS	40.81	396	24.51	772	21.02	829	25.54	412	28.15	210	44.45	485	29.16	3,104
	Average	40.81	396	25.49	916	21.73	964	25.12	443	27.78	231	44.45	485	28.98	3,435
7	SABE	.		4.14	97	8.59	22	13.17	29	38.52	23	.		10.87	171
	CTBS	45.01	403	26.52	431	21.28	627	26.25	567	30.37	625	48.33	609	32.56	3,262
	Average	45.01	403	22.41	528	20.85	649	25.61	596	30.66	648	48.33	609	31.48	3,433
8	SABE	.		3.54	91	1.78	23	13.35	26	30.78	32	.		9.85	172
	CTBS	51.14	391	24.57	141	19.40	109	24.91	792	31.56	947	52.05	701	34.28	3,081
	Average	51.14	391	16.32	232	16.33	132	24.55	818	31.53	979	52.05	701	34.85	3,253
9	SABE	.		25.46	24	33.61	46	47.97	203	31.67	3	83.00	1	43.58	277
	CTBS	41.82	302	21.13	62	14.38	56	21.54	584	27.28	1,105	46.44	811	32.58	2,920
	Average	41.82	302	22.34	86	23.05	102	28.36	787	27.29	1,108	46.48	812	33.63	3,197
10	SABE	.		.		28.35	17	32.64	42	46.00	2	.		31.89	61
	CTBS	44.53	283	22.95	22	18.33	75	21.42	491	29.43	1,063	47.75	798	34.55	2,732
	Average	44.53	283	22.95	22	20.18	92	22.31	533	29.46	1,065	47.75	798	34.49	2,793
11	SABE	.		.		.		53.00	1	.		.		53.00	1
	CTBS	38.03	244	17.91	90	12.68	44	18.73	306	24.14	758	44.24	698	31.01	2,140
	Average	38.03	244	17.91	90	12.68	44	18.84	307	24.14	758	44.24	698	31.02	2,141
12	SABE														
	CTBS	42.23	158	17.69	65	8.17	12	17.87	127	21.72	510	41.90	517	30.91	1,389
	Average	42.23	158	17.69	65	8.17	12	17.87	127	21.72	510	41.90	517	30.91	1,389

Mathematics achievement scores are reported in Table VI.15. As in the case of reading, this test is given more frequently in Spanish than in English during first three years. Students taking the test in Spanish (the SABE) tend to outscore those who take it in English, up until about the 5th grade. While math achievement scores are a bit closer together, the same pattern of higher scores for Mainstream FEP students, English only students and TBE program participants followed by significantly lower scores for the TBE & Immersion, the Immersion and the Mainstream LEP students. With an average score of 48.00, the redesignated Mainstream FEP students score close to the national average of 50.00. The low achieving students who do not qualify for redesignation certainly contribute significantly to the lower averages for bilingual program students.

Table VI.15: Mathematics Achievement Scores

1997 Math Achievement in NCS Scores
by Grade and ELD Program defined language services provided

		Not LEP/FEP		TBE		TBE & Immersion		Immersion		Mainstream LEP		Mainstream FEP		Grade Average	
Grade	Language	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N
1	SABE	.		50.64	2649	52.07	109	27.00	2	46.20	123	61.97	29	50.60	2912
	CTBS	42.30	638	36.36	47	32.06	66	40.26	436	37.79	124	47.02	326	41.77	1637
	Average	42.30	638	50.39	2696	44.53	175	40.20	438	41.98	247	48.24	355	47.42	4549
2	SABE	.		48.41	2366	44.09	162	56.67	6	41.07	46	58.35	23	48.12	2603
	CTBS	43.39	559	41.72	54	37.61	124	41.02	456	37.80	74	47.66	316	42.79	1583
	Average	43.39	559	48.27	2420	41.28	286	41.23	462	39.05	120	48.39	339	46.11	4186
3	SABE	.		47.54	1863	42.59	157	27.33	3	39.68	37	57.79	14	47.07	2074
	CTBS	45.35	522	40.41	330	35.12	201	38.87	411	39.70	100	50.87	297	42.52	1861
	Average	45.35	522	46.47	2193	38.40	358	38.78	414	39.69	137	51.18	311	44.91	3935
4	SABE	.		42.25	745	43.44	185	40.00	3	32.90	20	38.00	1	42.28	954
	CTBS	43.66	509	33.33	846	31.89	594	39.09	387	38.08	85	51.12	317	37.96	2738
	Average	43.66	509	37.51	1591	34.64	779	39.09	390	37.10	105	51.08	318	39.08	3692
5	SABE	.		32.53	291	32.60	87	61.00	1	34.14	7	.		32.65	386
	CTBS	43.93	539	31.89	1005	32.62	890	38.93	393	36.20	97	52.15	384	37.36	3308
	Average	43.93	539	32.03	1296	32.61	977	38.99	394	36.06	104	52.15	384	36.87	3694
6	SABE	.		26.83	144	21.65	135	18.74	31	19.71	21	.		23.51	331
	CTBS	42.62	396	31.26	772	27.33	829	32.80	412	31.69	210	48.85	485	34.84	3104
	Average	42.62	396	30.56	916	26.53	964	31.82	443	30.60	231	48.85	485	33.57	3435
7	SABE	.		4.05	97	7.32	22	8.93	29	31.13	23	.		8.94	171
	CTBS	42.35	403	30.30	431	25.03	627	31.02	567	32.47	625	50.32	609	35.06	3262
	Average	42.35	403	25.48	528	24.43	649	29.94	596	32.42	648	50.32	609	33.75	3433
8	SABE	.		3.44	91	3.22	23	10.65	26	26.47	32	.		8.78	172
	CTBS	44.76	391	26.74	141	21.39	109	26.05	792	32.19	947	49.59	701	35.53	3081
	Average	44.76	391	17.60	232	18.23	132	25.56	818	32.00	979	49.59	701	34.12	3253
9	SABE	.		9.71	24	26.59	46	35.37	203	20.00	3	76.00	1	31.87	277
	CTBS	37.90	302	24.95	62	20.30	56	26.29	584	28.86	1105	46.42	811	33.91	2920
	Average	37.90	302	20.70	86	23.14	102	28.63	787	28.83	1108	46.46	812	33.72	3197
10	SABE	.		.		14.18	17	26.38	42	32.50	2			23.18	61
	CTBS	40.93	283	24.23	22	21.40	75	27.99	491	30.77	1063	47.27	798	35.83	2732
	Average	40.93	283	24.23	22	20.07	92	27.86	533	30.78	1065	47.27	798	35.56	2793
11	SABE	.		.		.		1.00	1	.		.		1.00	1
	CTBS	35.14	244	28.49	90	22.00	44	31.10	306	29.74	758	44.83	698	35.26	2140
	Average	35.14	244	28.49	90	22.00	44	31.00	307	29.74	758	44.83	698	35.25	2141
12	SABE														
	CTBS	37.62	158	29.43	65	19.92	12	31.00	127	28.77	510	42.79	517	35.15	1389
	Average	37.62	158	29.43	65	19.92	12	31.00	127	28.77	510	42.79	517	35.15	1389

How Long Does It Take to Become Fluent in English?

The most important – and one of the most difficult – questions in any evaluation of English language development programs is to estimate how long it takes for children to become fluent in English and how much that time table is lengthened or shortened by program design, student circumstances and school contexts. As we noted in Section III of this report, ***previously published evaluation and research on this question has been seriously flawed by using the wrong statistical techniques for estimation. Virtually all studies – certainly all those being referenced in recent policy debates on the overall value of bilingual education programs – have attempted to calculate the time it takes to become fluent by including in their estimates only those children who have successfully made the transition into English fluency***. By leaving out of the estimation process all those children who have been attempting to learn English, but who have not yet reached fluency, *these studies very seriously under estimate* the time it takes to reach fluency. (The statistical techniques typically used produce the same type of time estimate error you would get if you averaged the times of the first one hundred finishers of

the Boston Marathon and then concluded that this is the average time it takes to run this grueling race. If only the fastest runners are included in the estimation, it becomes easy to erroneously conclude that the thousands of other runners are unmotivated, performing inadequately or have bad training programs.)

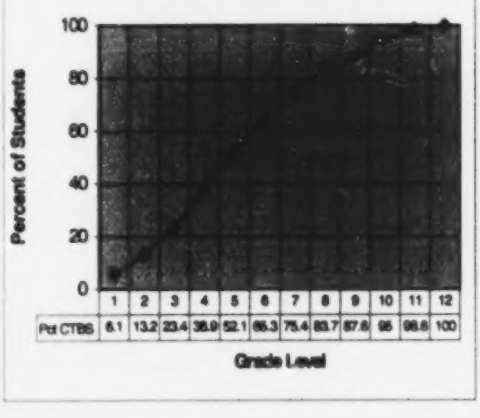
The two most serious consequences of using flawed statistical techniques to estimate language learning time have been: a) the discovery that every time data from longer term studies is analyzed it appears that children have taken a longer time to become fluent in a second language, and b) an unfounded belief that younger children are more adept at language learning and can change languages more quickly.

As described more fully in Section III, the appropriate technique for estimating the time to completion of a process that moves individuals from one status (Limited English Proficient) to another (Fluent English Proficient) is a technique developed for medical research known as "Survival Analysis." Survival analysis takes into account the two special features of this kind of change process. It has a procedure for handling "censored" cases (where individuals have started a change process, but have not completed it at the time a study ends). And it also is designed to make appropriate interpretation of the characteristic S-shaped distribution of transition times for a large population (that is where a few of those undergoing change move very rapidly, followed by a large number moving in the middle-range times and trailed by the smaller number who will take extra time).

While survival analysis is a bit more complex than other techniques for estimating the length of time for transition into English language fluency, its ability to improve the accuracy of the resulting estimates makes it important to apply and interpret.

We begin by noting that the rate at which children in Santa Ana schools shift from the Spanish language SABE test to the English language CTBS displays the characteristic S-shaped distribution of a survival process. Notice, in Table VI.16 that very few children shift over to English during the first two or three grades, followed by a rapid rise in the number that shift during grades four, five and six and a gradual slowing trend during the secondary years.

Table VI.16: Cumulative Percent of Students Transitioning from SABE to CTBS, grades 1 through 12 for academic years 94 through 97



The statistical technique known as survival analysis calculates the rate at which children move from one status to another (in this case from one level of English fluency to the next) by examining the proportion of those who succeed in moving among all who have an opportunity to move during each time period. In this evaluation study, time was calculated in months, so the survival analysis calculated what proportion of the students moved to the next language fluency level during each month following their initial classification at each language development level.

As noted throughout this report, English fluency progress for Santa Ana USD students is monitored across six distinct stages or levels:

1. Pre-Production,
2. Early Production,
3. Speech Emergence,
4. Intermediate Fluency,
5. Advanced Fluency, and
6. Redesignated as FEP

This means that students have up to five opportunities to advance up the fluency ladder – from Pre-Production to Early Production, from Early Production to Speech Emergence, etc. The time taken to move up from each level to the next can be estimated from the data available. Unfortunately, since the District's LEP database has only been in full operation for about three years, there are only a few cases of students whose movement has been tracked across the entire set of six stages. Most students have moved only two or three levels during the period of detailed tracking. Therefore, when survival analysis is used to estimate the movement across all six stages, different students will be providing the data at each of the different stages. This would not be a serious problem if English language development programs were well established and standardized. District staff have been working diligently during the last few years, however, to improve the design and the effectiveness of programs. Thus, as longer term data become available we may discover that there are significant shifts in the amount of time it takes for students to move through the various fluency stages. Nevertheless, when applied to the available data, survival analysis provides a powerful and accurate estimate of the amount of time typically taken to move from Pre-Production to Redesignation as Fluent English Proficient.

The charts shown on the next page (Tables VI.17a through VI.17e) present the "survival functions" for the movement of SAUSD students through each of the six English language fluency stages. The lines on each chart represent the students in each of the District's four ELD programs. The movement of the students receiving Transitional Bilingual Education (TBE) is shown with a dashed red line. Those receiving mixed TBE and Immersion services are shown with a dotted green line. Immersion program students are tracked with a blue dashed line. And the movement of LEP students receiving only mainstream support services is shown with a solid pink line.

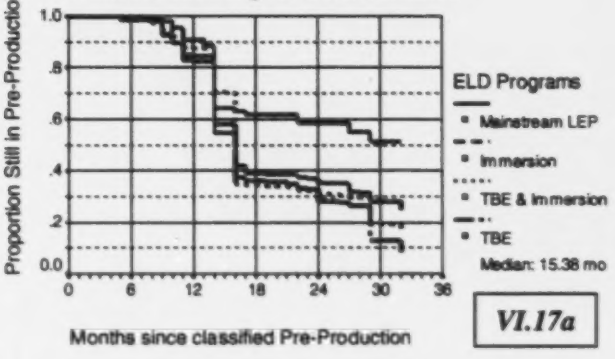
The vertical axis of each chart shows the proportion of students still in the earlier stage of English fluency. The horizontal axis tracks the number of months that have elapsed since the students were first identified as having reached the starting stage. Thus, the lines for all four ELD program groups start in the upper left corner of each chart, indicating that all students were at the starting fluency stage when timekeeping began. As the months pass (moving from left to right on each chart) the proportion of the students remaining at the beginning fluency level in each program is repeatedly plotted on the chart. The more rapidly students move from one fluency level to the next, the more rapidly the line for that group of students moves from the top to the bottom of the chart. Thus, for example, in Table VI.17a, the lines representing TBE, combined TBE & Immersion, and Immersion program students all descend more rapidly than the

Tables VI.17a through VI.17e: Charting Movement from One Fluency Level to the Next

Time: Pre-Production to Early Prod.

for each ELD Program

Without controlling for other variables

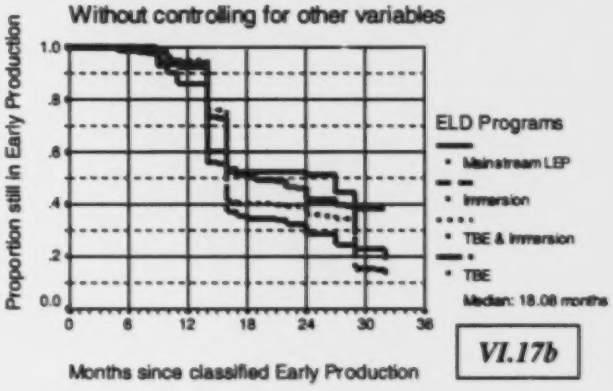


VI.17a

Time: Early Prod to Speech Emerg.

for each ELD Program

Without controlling for other variables

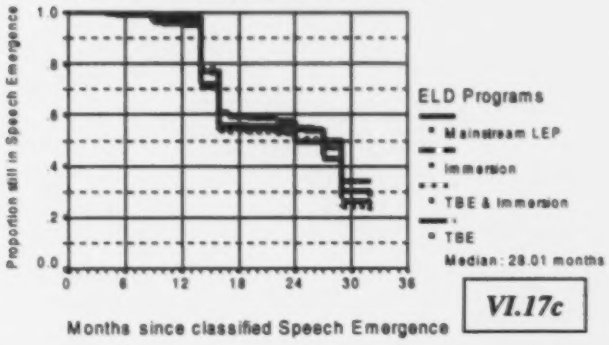


VI.17b

Time: Speech Emerg to Intermediate Fluency

for each ELD Program

Without controlling for other variables

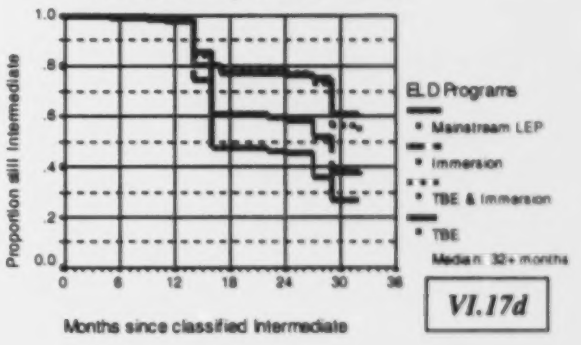


VI.17c

Time: Intermediate to Advanced Fluency

for each ELD Program

Without controlling for other variables

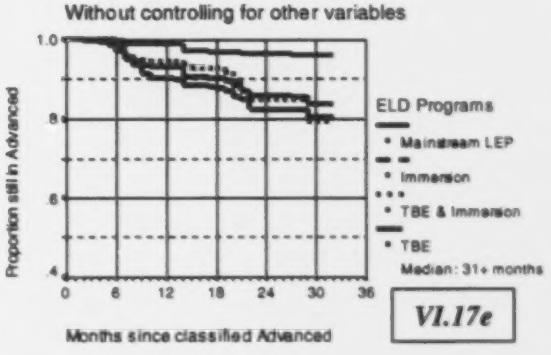


VI.17d

Time: Advanced to Redesignation

for each ELD Program

Without controlling for other variables



VI.17e

line for the Mainstream LEP student group, indicating quite graphically that students in each of the three program designs move more rapidly from the Pre-Production to Early Production stage.

Shown at the lower right hand corner of each chart is the survival analysis estimate of the median time for students to move between the fluency levels being examined. The median time is the time needed for 50 percent of the students to move from one level to the next. As shown in Table VI.17a, the median time for movement from the Pre-Production level to Early Production of English is 15.38 months. That is 50 percent of the students who enter SAUSD at the Pre-Production level will be reclassified as Early Production fluent in just over 15 months. The other 50 percent will take longer. In fact, as the tracking lines on this chart show, substantially less than 50 percent of the Mainstream LEP students move to Early Production by the 15th , or even the 18th month. Indeed, only about 50 percent of the Mainstream LEP students reach the Early Production level by the end of the 32 months of data available from the District's LEP database. By contrast, TBE, TBE & Immersion and Immersion students advance about 60 percent of their students to Early Production by the 18th month, and have less than 30 percent of their students still at the Pre-Production level at the end of 32 months. TBE programs bring the total remaining in the Pre-Production level below 15 percent by the end of the tracking period.

Close study of the charts shown in Tables IV.17b through IV.17e show that the students move at different rates across the various fluency stages. It takes just over 18 months for 50 percent of those students who reach Early Production to move on to the Speech Emergence level. Movement from Speech Emergence to Intermediate Fluency takes just over 28 months. Movements across the last two steps – Intermediate to Advanced Fluency and Advanced Fluency to Redesignation – take sufficiently long that the District's LEP database is not able to provide accurate estimates. It is clear that median time for movement from Intermediate to Advanced Fluency is at least 32 months, and from Advanced to Redesignation at least 31 months, but these times are too close to the end of the tracking time period to be confident that they are not significantly underestimating the actual time the typical student will take.

Careful examination of the charts also reveals that the various ELD programs do not have the same level of effectiveness in facilitating student language fluency growth at each stage in the process. While the students in TBE programs move slightly more rapidly from Pre-Production to Early Production, and again from Advanced Fluency to Redesignation, the Immersion has the best time moving students from Early Production to Speech Emergence. There is almost no difference among programs in the movement from Speech Emergence to Intermediate Fluency and the Mainstream LEP students move the most rapidly from Intermediate to Advanced Fluency. This mixed pattern of results leads to two conclusions:

a) Different ELD program approaches are more effective in addressing some types of language development than others. That is, a single ELD program design is probably not the best way to move students through all stages of English language acquisition. Different instructional designs probably help at different stages in the process.

b) Since students are not randomly assigned to ELD program types, it is not appropriate to think of the time data as proving that one program is globally more effective than another. Analysis of this question will require close study of the differences in

program intakes. And even then, care should be taken in making program adjustments.

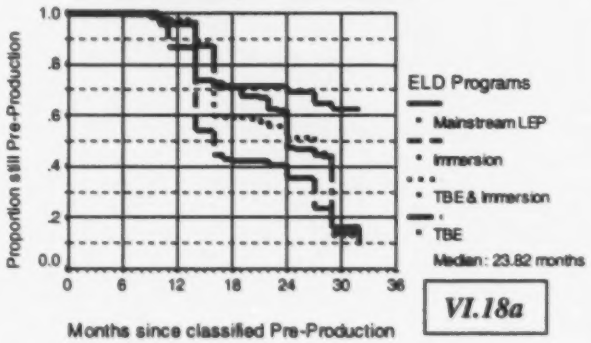
The simplest estimate of the time it takes for students who enter public schools to move through all the steps from Pre-Production to Redesignation would be to add together the median times shown on Tables VI.17a through VI.17f. This total (15.38 + 18.08 + 28.01 + at least 32.00 + at least 31.00) yields an estimated time of English language proficiency development of at least 124.47 months (about ten and a third years). This is quite a bit longer than recent published estimates that have been running in the five to seven year range. Additionally, these estimates include many students who entered Santa Ana schools well after their kindergarten year and who may have special learning problems. One check on this lengthy estimate of the time to reach full English fluency can be made by examining how long it takes for those students whose record contains movement across multiple stages to move two or more steps.

Tables VI.18a-c: Two Stage Language Development

Time: Pre-Production to Speech Emerg

for each ELD Program

Without controlling for other variables



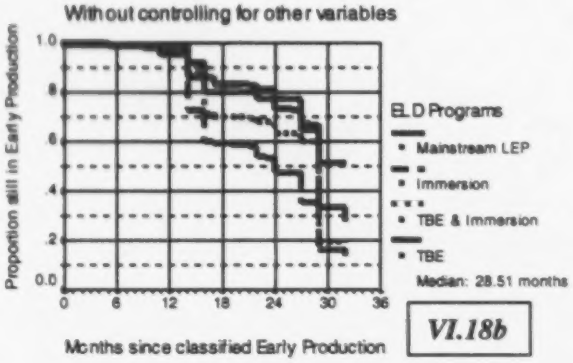
VI.18a

As shown in Tables VI.18a through VI.18c, there are sufficient numbers of students moving through multiple stages to make reasonably reliable estimates of how long it takes to move two language development levels.

Time: Early Production to Intermediate

for each ELD Program

Without controlling for other variables



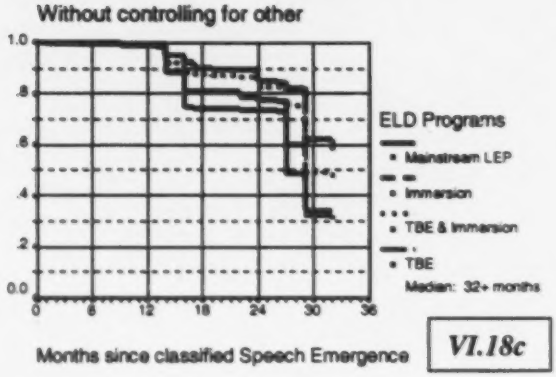
VI.18b

The survival analysis estimate for movement from the Pre-Production, through Early Production and to the Speech Emergence stage is 23.82 months (nearly two years, but considerably less than the 33.44 months estimated by considering the movements one level at a time).

The estimated time to move from Early Production to Intermediate Fluency is 28.51 months. While considerably more than two years, this estimate is also well below the 46.09 months produced when estimates for the two separate stages are added together.

The time for movement across the two stages from Speech Emergence to Advanced Fluency could not be accurately estimated, but is expected to be in excess of the 32 months of data available. Overall, these two-stage estimates suggest that when more data become available we may find that the estimates produced by simply adding together the five separate stage to stage calculations may be a little bit generous. There is no reason to expect, however, that subsequent analysis will produce estimates at all close to the two or three year estimates often found in the literature and generally used for the design and implementation of various Bilingual Education programs.

Time: Emergence to Advanced for each ELD Program



VI.18c

The two-stage survival function lines for each of the District's ELD programs strengthen the case for Immersion programs which display somewhat more rapid development of language facility in these charts than in the single stage charts presented in Tables VI.17a-f. The stronger showing of TBE programs at the first and last stages is obscured in these two-stage assessments.

Factors Influencing the Time it Takes to Become English Language Fluent

Table VI.19 charts the impact of 21 different variables on the rate at which students move from one English fluency stage to the next. Except where an "ns" is entered into this table indicating that a relationship is statistically "not significant", each identified variable has a significant influence on the rate of English language acquisition.

Though all of the relationships are statistically reliable, the amount of influence over language acquisition varies substantially from one variable to another and from one language development stage to another. The numbers in the cells of Table VI.19 report the relative strength of the impact each variable has. The numbers presented are the so-called "odds ratio" measuring how much more or less likely students are to move from one language fluency level to another with a change in the influencing variable. An odds ratio of 1.00 means that a variable has no influence. That is, if a variable has an odds ratio of 1.00 it means that students have exactly the same chance of moving from one level to the next regardless of their score on the variable being tested for influence. Odds ratios of more than 1.00 mean that a variable has a positive influence on English language acquisition. If the odds ratio is 2.0, for example, it means that a student is twice as likely to move from one language fluency level to the next for each increment of 1 unit on the variable being tested. Similarly, an odds ratio of less than one means the variable being tested reduces the probability of movement from one language level to the next. An odds ratio of 0.5 would indicate that students with a 1 unit higher score on this variable cut their chances of moving to the next language development level by half. These are the numbers typically included in stories by the popular press when reporting on how much a bad health habit increases

chances of heart attack or cancer and how much things like air bags can reduce the chances of traffic fatalities.

Table VI.19: Variables Affecting the Rate of Language Acquisition

Variables Influencing the Probability of Moving from One Language to the Next										
Student Variables	Pre-Production to Early Production	Pre-Production to Speech Emergence	Early Production to Speech Emergence	Early Production to Intermediate Fluency	Speech Emergence to Intermediate Fluency	Speech Emergence to Advanced Fluency	Intermediate Fluency to Advanced Fluency	Intermediate Fluency to Redesignation	Advanced Fluency to Redesignation	Average
Continuous Variables										
Grade	0.92	ns	0.78	0.77	0.76	0.78	0.85	0.87	1.07	0.84
Time in SAUSD Schools	0.92	0.98	0.76	0.76	0.74	0.81	0.79	0.72	0.97	0.82
Days Absent from School	0.99	0.99	0.99	0.99	0.98	0.98	0.99	0.99	1.001	0.99
Years not in SAUSD	0.95	1.02	0.95	0.91	ns	0.94	1.07	1.14	1.11	1.02
Months in Current School	1.005	1.009	0.99	0.99	ns	1.005	1.007	ns	1.03	1.01
Moved Schools at least Once	0.76	0.79	0.77	0.8	0.79	0.8	0.85	0.86	0.67	0.79
School to School Transiency	0.74	0.76	0.87	ns	ns	ns	ns	1.2	ns	0.94
Poverty Status	0.89	0.93	1.23	1.35	1.44	1.62	1.38	1.28	1.92	1.39
Overage for Grade	0.89	0.94	0.85	0.82	0.8	0.74	0.94	0.89	1.55	0.94
Special Education Certified	0.56	0.53	0.56	0.62	0.42	0.37	0.54	0.58	0.25	0.48
Handicapped	0.55	0.53	0.57	0.63	0.41	0.37	0.54	0.57	0.25	0.48
Categorical Variables										
Gender										
Female	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	
Male	ns	ns	ns	ns	ns	ns	ns	ns	ns	
Ethnicity										
Hispanic	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	
Asian	ns	ns	0.45	0.48	0.3	0.32	0.36	0.35	0.3	0.37
All Others	ns	ns	0.81	0.88	0.13	0.12	0.31	0.34	missing	0.43
Native Language										
Spanish	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	
Pacific Rim Languages	1.34	1.52	0.45	0.44	0.33	0.32	0.44	0.43	0.29	0.53
All Others	6.85	0.02	0.34	0.57	missing	missing	missing	missing	missing	0.31
YRE Cycle										
Traditional	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	
Cycle A	0.92	0.75	1.16	1.24	1.28	1.58	ns	0.70	ns	1.12
Cycle B	0.87	0.75	1.02	1.05	1.08	1.36	ns	0.77	ns	1.01
Cycle C	0.80	0.75	0.99	0.95	1.30	1.74	ns	0.76	ns	1.08
Cycle D	0.95	0.74	1.05	1.14	1.13	1.33	ns	0.76	ns	1.03
Neighborhood of Residence										
Zip 92701	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	
Zip 92702	0.57	0.77	0.88	0.95	1.02	0.80	ns	ns	ns	0.88
Zip 92703	0.86	0.90	0.93	0.89	0.93	0.99	ns	ns	ns	0.93
Zip 92704	0.84	0.84	0.85	0.83	0.83	0.83	ns	ns	ns	0.84
Zip 92705	0.74	0.99	0.71	0.71	0.93	1.06	ns	ns	ns	0.88
Zip 92706	1.59	1.56	0.87	0.76	1.08	1.21	ns	ns	ns	1.10
Zip 92707	1.07	1.17	0.85	0.83	0.79	0.85	ns	ns	ns	0.90
All Others	0.79	0.85	0.68	0.65	0.91	0.76	ns	ns	ns	0.77
Teacher Variables										
Age	ns	ns	0.99	0.98	0.99	0.99	0.99	0.99	0.94	0.98
Gender	0.87	ns	0.59	0.52	0.59	0.64	0.71	0.72	ns	0.63
Experience	1.01	ns	0.98	0.98	0.99	0.99	0.97	0.97	ns	0.98
Education	1.15	1.21	ns	ns	ns	ns	1.30	1.32	ns	1.28
Certification	1.05	1.03	0.96	0.96	0.94	0.95	0.90	0.90	0.43	0.88

The tested variables described in Table VI.19 are clustered into three groups. The top of the table presents 11 student characteristics that change along a scale measured as differences in

amount (where having a score of 2 means that the student has more of this characteristic than having a score of 1).

In the bottom section of the table are teacher characteristics. Each student was assigned a variable value on the basis of the value on each variable which his or her teacher possessed. The only students with whom it was possible to associate teacher characteristics were elementary students (since secondary students have more than one teacher their teacher characteristics could not be analyzed).

In the middle section of the table are five student characteristics in which students belong to discrete groups (like ethnic or gender groups). In this case, having a score of 2 does not mean having more of some characteristic than having a score of one, it just means the student belongs to a different group. These discrete grouping variables are a bit more complicated to evaluate than the ones with regular scales. To interpret the impact of these variables, it is necessary to select a "reference" group and then assess the probability of advancing in fluency relative to the reference group. For the ethnicity variable, for example, the very large group of ethnic Hispanics were selected as a reference group and this variable was evaluated by examining whether other students are more or less likely to move to the next fluency level than the Hispanic reference group.

In the right hand column of the table the average influence of each variable is reported. The cells in the large central part of the table report the odds ratio for movement from one language development level to the higher or to a level two stages more advanced, as indicated at the top of each column.

As the entries across the middle rows of the table indicate, student gender has no measurable effect on language development at any level. This variable was retained because of the general interest in whether schools are providing girls and boys with equal educational opportunities. In regard to language development, at least, Santa Ana schools have clear evidence that sex equity has been realized.

Though it is tempting to just look at the overall average effect of these variables in order to conclude whether they are supporting or interfering with language development, the numbers in the middle columns show that more than half of them (12 to be exact) have different effects at different stages of the language acquisition process. Most often, the reversal of effect for these variables occurs at one end or the other of the language development process. The influence of the student's grade level (the first variable on the table) illustrates this tendency. As children advance in grade, their movement through the various stages of language acquisition tends to slow down, except for the movement from advanced fluency to redesignation and a Fluent English Proficient student. The rate of movement from the earliest Pre-Production level to the Early Production level drops by about 8 percent (the odds ratio is .92) for each grade the child advances without making this crucial language development step. In the middle levels of language development the price of delayed movement is a bit higher. No doubt, this fact is partly the result of program designs – curriculum materials and instructional activities are geared to addressing language development during the first three or four years of schooling. Children who fall behind the expected rate of progress probably find themselves caught in the dilemma of

trying to keep up with the language development process while being expected to shift their attention to more content oriented learning tasks. The total amount of time students have spent in SAUSD schools (which closely parallels their grade level) bears a similar relationship to language development.

Six variables have a consistently negative impact on the rate of English language development. They include, in order of the magnitude of their impact:

1. *Ethnicity*
   The language development rate of LEP students from Asian countries and those from non-Hispanic backgrounds have a consistently harder time moving along the language development process (overall odds ratio of .37 for Asians, .43 for others).

2. *Home Language*
   Being a native speaker of a non-English language other than Spanish has a nearly identical effect, except that these students make very rapid progress at the very first step – moving from Pre-Production to Early Production of English.

3. *Special Education* (the overall odds ratio for each of these variables is about .48)
   Special status students (educationally handicapped or certified for special education), as would be expected, have a harder than average time with English language development – on average, they move through the language stages at only about half the rate of their peers.

4. *Transiency Rate* (average odds ratio of .79).
   Language development programs lose about 21 percent of their effectiveness for students who move from one school to another.

5. *Teacher Age* (average odds ration is .96)
   Students assigned to older teachers are slower to advance in ELD levels.

6. *Teacher Gender* (average odds ratio is .63)
   Students assigned to male teachers are slower to advance in ELD levels.

Increased education among teachers has a strong positive impact on language acquisition at both the early and late stages, raising the probability that students will move out of the Pre-Production stage by 15 to 21 percent, and improving the chances of their reaching Advanced Fluency or Redesignation by about 30 percent.

All of the attendance cycles in Year Round Schools, when compared with traditional calendar schools have consistently positive results during the middle stages of language acquisition, and generally lower rates of movement at the lowest and highest stages.

Student residential neighborhoods, as measured by postal zip codes, have significant, but often mixed impact on language acquisition.

The Influence of Language Development on Student Achievement

Tables VI.20a and VI.20b present results from the first in a series of a multi-variate statistical analyses aimed at evaluating the impact of various student and school factors on reading and mathematics achievement as measured by the CTBS and SABE tests administered in 1997. This analysis is limited to the LEP student population, since the language development variables of interest are only available on these students. Due to technical limitations, teacher characteristics could not be entered into the same statistical modeling process as the student and school variables.

Table VI.20a: Analysis of Variance (ANOVA) Assessing the Impact on Reading Achievement of Various Student and School Level Variables

(1997 NCE Reading Scores - SABE or CTBS) -- R = .623; R-Squared = .388

Main Effects with Covariates		Sum of Squares	df	Mean Square	F	Sig.	B	Beta Adj
	(Combined)	**2,288,602.0**	**25**	**91,544.1**	**361.76**	**0.000**		
	Year Round Calendar Cycle	**19,215.0**	**4**	**4,803.8**	**18.98**	**0.000**		**0.07**
	Program defined language services provided	**60,412.8**	**3**	**20,137.6**	**79.58**	**0.000**		**0.11**
	Test language in 97 (SABE if both)	**938,303.6**	**1**	**938,303.6**	**3,707.99**	**0.000**		**0.65**
	ELD Level in 97	**155,356.9**	**5**	**31,071.4**	**122.79**	**0.000**		**0.23**
	Revised Ethnic Code	*14.7*	*1*	*14.7*	*0.06*	*0.809*		*0.01*
	Language: 1=Hisp, 2=PacR 3=Oth	*12.9*	*2*	*6.4*	*0.03*	*0.975*		*0.01*
Covariate	**Student Gender**	**3,098.4**	**1**	**3,098.4**	**12.24**	**0.000**	**-0.94**	
	Number of days absent - all students	**67,637.8**	**1**	**67,637.8**	**267.29**	**0.000**	**-0.17**	
	Whole years not in SAUSD	**66,485.2**	**1**	**66,485.2**	**262.74**	**0.000**	**-0.91**	
	Overage for grade (msng: <-1, >6)	**6,183.5**	**1**	**6,183.5**	**24.44**	**0.000**	**-1.17**	
	Special Ed - Any Service	**43,043.4**	**1**	**43,043.4**	**170.10**	**0.000**	**-7.81**	
	Move 1 or more schools	**7,677.9**	**1**	**7,677.9**	**30.34**	**0.000**	**-2.28**	
	Overall transiency (extra schls/year)	*325.9*	*1*	*325.9*	*1.29*	*0.256*	*0.67*	
	Months at Current School	*218.3*	*1*	*218.3*	*0.86*	*0.353*	*-0.01*	
	Poverty Status	*161.6*	*1*	*161.6*	*0.64*	*0.424*	*-0.30*	
Model		**2,288,602.0**	**25**	**91,544.1**	**361.76**	**0.000**		
Residual		3,616,832.5	14293	253.0				
Total		5,905,434.5	14318	412.4				

a NCE Reading in 97 by Revised Ethnic Code, Year Round Calendar Cycle, Language: 1=Hisp, 2=PacR 3=Oth, Program defined language services provided, Test language in 97 (SABE if both), ELD Level

b Covariates entered with main effects

c Due to empty cells or a singular matrix, higher order interactions have been suppressed.

Table VI.20a reports on the statistical reliability with which each of 15 variables successfully predicts the level at which students achieve in reading. The column, labeled "sig.", contains the important numbers in this table. These numbers show the probability that each variable in the analysis might not be a reliable predictor of achievement. If the number for a particular variable is at or near zero, there is little or no chance that the impact of that variable would not be confirmed in further research. A "sig." or significance number of .500 would mean that there is a fifty-fifty chance that the variable has no influence on achievement, regardless of apparent results found in the current data. As the significance numbers approach 1.000 we can become increasingly confident that the variable in question has no influence on the achievement of Santa Ana students – at least when achievement is measured by the SABE and CTBS tests.

Five of the variables in this analysis have significance values indicating that they probably have no bearing on student achievement in reading. These non-significant variables include: the students' ethnic backgrounds, native language, poverty status, months enrolled in their current school, and overall transiency (that is moving from school to school). Note, however, that there are two different measures of transiency in this analysis. The second transiency variable compares all students that changed schools at least once during the last five years (not counting moves from elementary to middle or middle to high school) with those whose education was not disrupted by any school changes. This latter variable is a strong and reliable predictor of reading achievement.

The remaining ten variables – including the students' English language fluency levels – all have significance scores of .000, indicating that they are highly reliable predictors of student achievement in reading.

Since we are assured by the significance scores that these ten variables are reliable predictors of achievement, can we estimate how much each variable may have? For the answer to this question, we turn to the column labeled "B" on Table VI.20a and the data presented in Table VI.20b. A measure of the magnitude of effect each of the seven variables that change in degree or magnitude (rather than serving to classify students into distinct groups) is reported in the next to last column of Table VI.20a. The so-called "B" scores for all of these continuous variables (i.e. those varying by amount or degree) is the average amount that achievement test scores change for each one unit of change in the predictor variable.

As might be expected, among the highly reliable predictors of reading achievement, the "B" score for the variable indicating whether students are certified for special education is the largest. Since this variable has only the values of 0 (for students not certified for special education) and 1 for those that are, the -7.81 B-score for this variable means that students in special education programs score nearly 8 points below their regular education peers on the District's reading achievement examination. Students who change schools at least once in five years are prone to score about two and a quarter point below their non-transient peers.

Absenteeism also erodes reading achievement. Students lose, on average about $1/6^{th}$ of an NCS point on their reading test for every day they miss.

Achievement loss is further eroded for students who do not enter SAUSD at the start of their schooling. For every year past kindergarten that they enter District schools, students loose about 9/10ths of a point on the test.

Finally, boys score less well on the reading test than girls; .94 points less on the average.

To assess the magnitude of the impact on student reading achievement produced by the categorical variables shown on Table VI.20a we must refer to the numbers on Table VI.20b. The numbers on this table provide three kinds of information for each student group. The first column (labeled "N") reports the number of students in each sub-group. Thus, for example, the table shows that 13,769 Hispanic students took the reading tests, as compared with 550 students of Asian heritage and only 45 students from all other backgrounds.

Table VI.20b: Mean and Deviation Reading Test Scores on Student Groups (1997 NCE Reading Scores -- SABE and CTBS)			Predicted Mean		Deviation	
		N	Unadjusted	Adjusted for Factors and Covariates	Unadjusted	Adjusted for Factors and Covariates
Revised Ethnic Code	Hispanic	13,769	32.79	32.62	0.18	0.01
	Asian	550	28.90	32.69	-3.71	0.08
	Other	45	23.71	28.21	-8.90	-4.40
Year Round Calendar Cycle	Traditional	7,229	28.43	33.70	-4.18	1.09
	Cycle A	1,555	39.82	33.17	7.21	0.56
	Cycle B	1,650	36.36	32.24	3.75	-0.37
	Cycle C	1,993	36.00	29.78	3.39	-2.83
	Cycle D	1,937	35.75	31.31	3.14	-1.30
Language	Hispanic	13,767	32.79	32.57	0.18	-0.05
	Pacific Rim	584	28.63	33.67	-3.98	1.06
	Other	13	19.23	32.90	-13.38	0.29
Program	TBE	4,864	43.09	32.99	10.48	0.38
	TBE & Immersion	2,201	27.91	28.29	-4.70	-4.32
	Immersion	3,348	25.65	31.63	-6.96	-0.98
	Mainstream LEP	3,951	28.23	35.38	-4.39	2.77
Test language in 97 (SABE if both)	SABE	4,074	50.41	53.53	17.80	20.92
	CTBS	10,290	25.57	24.33	-7.05	-8.28
ELD Level in 97	Pre-Production	687	42.62	23.27	10.00	-9.34
	Early Production	1,715	45.88	26.93	13.27	-5.68
	Speech Emergence	2,683	37.04	28.44	4.43	-4.17
	Intermediate Fluency	3,278	28.11	32.18	-4.50	-0.43
	Advanced Fluency	5,392	27.22	36.79	-5.39	4.18
	Redesignated	609	36.41	42.84	3.80	10.23

a. NCE Reading in 97 by Revised Ethnic Code, Year Round Calendar Cycle, Language, Program, Test language in 97 (SABE if both), ELD Level

Next to the number of students column are two columns containing overall reading achievement test score averages for each group. The first of these two columns contains the "Unadjusted" means – the simple average of all test scores from the group identified at the left side of the table. The second column of mean scores is the so-called "Adjusted" mean – the average reading score members of this student group would get if they were not affected by any of the other variables in the study. The last two columns on the table show the "Deviation" scores, the difference between the scores for students in each group and the overall average all students.

These numbers are perhaps most easily understood in relation to the language of the test taken by each student (shown just above the ELD Level data at the bottom of the table). As shown in the number of students column, 4,074 LEP students took the reading test in Spanish (the SABE) while 10,290 took the test in English (the CTBS). The average score on the Spanish language test, for all students, was 50.4072 – just above the national norm of 50 points. Students taking the test in English, by contrast scored an average of only 25.5654 – more than 24 points below the Spanish language test takers. As seen earlier in our discussion of Table VI.14, this very large

difference is found at all grade levels and in all bilingual programs. Moreover, as shown in the column listing adjusted mean scores, the difference is even more dramatic than the unadjusted test scores would suggest. When other differences between the Spanish and English language test takers are considered, the difference in overall reading performance jumps to more than 29 NCE points – substantially *more than two years of academic growth*. This difference is not only true for the total student population, it is also found when we consider only those students who have taken both the Spanish and English version of the tests. Whenever students shift over to take the examination in English they appear to be achieving far less reading fluency than that measured on the Spanish language examination.

This loss in measured reading achievement does not apply to every single student who shifts from Spanish to English, of course. But it is found in such a large majority that we must conclude that either the tests are highly biased or that children moving to the English language version of the examination are actually much better readers than their scores on the English CTBS would indicate. (Discussions with the test maker, CTB McGraw, indicate that these two test are normed in such a way that a score of 50.00 on each test means that students have reached the same level of reading competency – in the language of the test – and that differences in performance across the tests reflect differences in language development, not overall reading ability).

Nearly as powerful as the test language in predicting student performance levels is the teacher reported English Language Development level for each student. As shown at the bottom of Table VI.20b, students do better (on whatever reading test they take) with each new level of English language fluency. Students at the Pre-Production in English score more than 9 points below the average on the reading exam – even if they take the examination in Spanish. Students who have been redesignated score about 10 points above average. The other ELD levels are spread out between these end points, with a positive advantage accruing only to students who reach the Advanced Fluency level or above.

It is especially important to remember that the small differences between language and ethnic groups shown on this table are not statistically reliable and should not be considered indicators of real differences in reading attainment.

As indicated near the middle of the table, the four different ELD programs have significantly different effects on student reading outcomes. The biggest deviation from the general student population is that for students who have mixed TBE and Immersion program experiences. These students score more than 4 points below other students after their test scores are adjusted for other factors (including the test language). The biggest positive reading margin was obtained by students in Mainstream LEP programs who were not provided with any specific ELD program support services. It must be remembered, however, that student placement typically follows careful professional deliberation and family consultation, so that students left in the educational mainstream are almost certainly those judged to be the most able and with the strongest family support.

Year Round Education, while reliably linked to reading achievement, does not have a particularly dramatic effect. Students in traditional calendar schools have about a 1 point

advantage, and children on Cycle C nearly a 3 point disadvantage, but these numbers are small compared to ELD levels and test language differences.

Two additional pieces of information found on Table VI.20a present a broad overview of the statistical model presented above. The last column of this table (labeled "Beta Adj") reports a set of statistics that enable us to see the relative importance of each of the student grouping factors in predicting their level of reading achievement. The column reports the Beta Coefficients (adjusted for factors and covariates) for each factor in the study. These scores are standardized in a way that makes it appropriate to directly compare the value for one grouping variable against the value for others.

That is, the value of .65 for the Test Language variable, when compared with the value of .23 for the ELD Level in 97, indicates that the difference in performance between Spanish and English language test takers is nearly three times as great as the differences among the various language development levels (.65/.23 = 2.80).

Finally, near the top of Table VI.20a statistical measures characterizing the overall power of the variables studied in this analysis to predict student achievement in reading are reported. The value of the "R-Squared" number is a measure of the overall ability of all the variables studied in these tables to predict how well students will perform on their reading assessment test. The value of .388 means that these variables account for nearly 40 percent (38.8 percent to be exact) of all reading achievement differences – a very powerful finding, more powerful than is usually found in this type of evaluation study.

The influence of Primary Language Development on Reading Achievement in English?

Tables VI.21a and VI.21b present an analysis of the same reading test data just discussed. The only difference between the analyses in this set of tables and that presented in Tables VI.20a-b is the inclusion of the level of Primary Language Development reported for each student.

As shown in Table VI.21a, the Primary Language Development variable, "PLD Level in 97," makes a highly significant additional contribution to explaining the level of reading achievement among Santa Ana students. Except for the reliability of the Overage for Grade variable, inclusion of this variable does not change the reliability of any other indicators in the model. The Overage variable continues to predict about the same amount of change in reading attainment, but with this model the significance level is only .075, meaning that about 75 times in a thousand this finding would be the result of chance variations in the particular sample of students being studied.

Table VI.21a: Analysis of Variance (ANOVA) Assessing the Impact on Reading Achievement including Primary Language Levels

(1997 NCE Reading Scores - SABE or CTBS) R = .647; R-Squared = .419

Main Effects with Covariates		Sum of Squares	df	Mean Square	F	Sig.	B	Beta Adj
	(Combined)	**1,512,127.4**	**30**	**50,404.2**	**169.27**	**0.000**		
	Year Round Calendar Cycle	**18,832.8**	**4**	**4,708.2**	**15.81**	**0.000**		**0.08**
	Program defined language services provided	**19,655.6**	**3**	**6,551.9**	**22.00**	**0.000**		**0.08**
	Test language in 97 (SABE if both)	**675,313.8**	**1**	**675,313.8**	**2,267.93**	**0.000**		**0.65**
	ELD Level in 97	**54,287.5**	**5**	**10,857.5**	**36.46**	**0.000**		**0.16**
	PLD Level in 97	18917.909	4	**4,729.5**	15.883	**0.000**		**0.08**
	Revised Ethnic Code	*79.2*	*1*	*79.2*	*0.13*	*0.715*		*0.02*
	Language: 1=Hisp, 2=PacR 3=Oth	*497.6*	*2*	*248.8*	*0.84*	*0.433*		*0.01*
Covariate	**Student Gender**	**12,938.9**	**1**	**12,938.9**	**43.45**	**0.000**	**-2.72**	
	Number of days absent - all students	**20,609.7**	**1**	**20,609.7**	**69.21**	**0.000**	**-0.27**	
	Whole years not in SAUSD	**58,510.3**	**1**	**58,510.3**	**196.50**	**0.000**	**-2.11**	
	Overage for grade (msng: <-1, >6)	942.7	1	942.7	3.17	0.075	-0.83	
	Special Ed - Any Service	**24,241.3**	**1**	**24,241.3**	**81.41**	**0.000**	**-8.84**	
	Move 1 or more schools	**7,693.6**	**1**	**7,693.6**	**25.84**	**0.000**	**-3.17**	
	Overall transiency (extra schls/year)	*746.8*	*1*	*746.8*	*2.51*	*0.113*	*1.33*	
	Months at Current School	*18.8*	*1*	*18.8*	*0.06*	*0.802*	*0.80*	
	Poverty Status	*1.2*	*1*	*1.2*	*0.00*	*0.950*	*0.04*	
Model		**1,512,127.4**	**30**	**50,404.2**	**169.27**	**0.000**		
Residual		2,098,065.7	7046	297.8				
Total		3,610,193.1	7076	510.2				

a NCE Reading in 97 by Revised Ethnic Code, Year Round Calendar Cycle, Language: 1=Hisp, 2=PacR 3=Oth, Program defined language services provided, Test language in 97 (SABE if both), ELD Level

b Covariates entered with main effects

c Due to empty cells or a singular matrix, higher order interactions have been suppressed.

Table VI.21b provides documentation of the extent to which reading achievement is influenced by a student's level of fluency in his/her primary language. The effect for the 84 Pre-Production students is essentially zero, but for the larger groups with primary language fluency levels ranging from Early Production to Advanced Fluency, we find a steady increase in achievement scores as with each advance in language fluency. The range is considerably smaller than that associated with English fluency – the Early Production group falls about 5 points below the overall test mean while the Advanced Fluency group is a little over 2-1/2 points above the overall test average.

Table VI.21b: Mean and Deviation Reading Test Scores with PLD Levels
(1997 NCE Reading Scores – SABE and CTBS)

			Predicted Mean		Deviation	
		N	Unadjusted	Adjusted for Factors and Covariates	Unadjusted	Adjusted for Factors and Covariates
Revised Ethnic Code	Hispanic	6,957	39.00	38.80	0.15	-0.05
	Asian	112	29.97	41.76	-8.87	2.91
	Other	8	32.75	41.92	-6.10	3.07
Year Round Calendar Cycle	Traditional	1,519	35.82	41.06	-3.03	2.21
	Cycle A	1,263	42.74	40.11	3.89	1.26
	Cycle B	1,335	38.80	38.84	-0.05	-0.01
	Cycle C	1,553	38.40	36.24	-0.44	-2.61
	Cycle D	1,407	39.16	38.21	0.31	-0.63
Language	Hispanic	6,954	39.01	38.87	0.16	0.02
	Pacific Rim	122	29.92	38.01	-8.93	-0.84
	Other	1	1.00	14.63	-37.85	-24.22
Program	TBE	4,350	45.19	39.95	6.34	1.10
	TBE & Immersion	1,711	29.60	35.69	-9.24	-3.15
	Immersion	694	25.90	39.30	-12.95	0.45
	Mainstream LEP	322	30.16	39.81	-8.68	0.96
Test language in 97 (SABE if both)	SABE	3,673	51.50	52.98	12.65	14.14
	CTBS	3,404	25.20	23.59	-13.65	-15.25
ELD Level in 97	Pre-Production	489	42.85	31.53	4.00	-7.32
	Early Production	1,460	49.02	36.65	10.17	-2.20
	Speech Emergence	2,072	41.78	37.41	2.93	-1.44
	Intermediate Fluency	2,010	31.49	40.14	-7.36	1.29
	Advanced Fluency	759	29.34	44.36	-9.51	5.52
	Redesignated	287	35.83	49.24	-3.02	10.39
PLD Level in 97	Pre-Production	84	37.35	38.93	-1.50	0.08
	Early Production	417	39.47	33.51	0.62	-5.33
	Speech Emergence	1,931	42.48	37.47	3.63	-1.37
	Intermediate Fluency	3,175	39.42	39.19	0.58	0.34
	Advanced Fluency	1,470	32.75	41.42	-6.10	2.57

a. NCE Reading in 97 by Revised Ethnic Code, Year Round Calendar Cycle, Language, Program, Test language in 97 (SABE if both), ELD Level

Once again, the last column in Table VI.21a reports the relative power of each of the factors described on Table VI.21b in predicting reading achievement. As before, the test language is, by far, the most potent predictor, followed by English language development level and then primary language development level. The influence of ELD program enrollment remains significant, but is fourth place behind test language and the two language development level indicators. The "R" and "R-Squared" values reported at the top of Table VI.21a re-evaluates the power of the entire model. The ability to explain differences in reading achievement level goes up from the previous model's .388 to an R-squared value of .419, a gain of a little over 3 percent in explanatory power. That is, we will on average be 3 percent more accurate in predicting a child's overall reading achievement scores if we know how fluent they are in their primary language.

This may not seem like a lot of difference, but it is comparable to the margin of difference separating winners and losers in most popular elections, and is larger than the winning margin in most professional sports.

How about Language Fluency Influence on Mathematics Achievement?

Tables VI.22a & b and VI.23a & b are exactly parallel with the reading achievement analyses just reviewed, except that the dependent variable in each case is the rate of mathematics rather than reading achievement.

There are a number of modest differences between reading and mathematics achievement patterns among SAUSD students. As with reading, student gender does not influence math achievement, and transiency beyond the first school to school move does not further erode achievement. However, both student ethnicity and poverty status influence significantly the rate of math attainment.

Table VI.22a: Analysis of Variance (ANOVA) Assessing the Impact on Mathematics Achievement of Various Student and School Level Variables

(1997 NCE Mathematics Scores - SABE or CTBS) R = .461; R-Squared = .212

Main Effects with Covariates		Sum of Squares	df	Mean Square	F	Sig.	B	Beta Adj
	(Combined)	**2,288,602.0**	**25**	**91,544.1**	**361.76**	**0.000**		
	Year Round Calendar Cycle	**19,215.0**	**4**	**4,803.8**	**18.98**	**0.000**		**0.07**
	Program defined language services provided	**60,412.8**	**3**	**20,137.6**	**79.58**	**0.000**		**0.11**
	Test language in 97 (SABE if both)	**938,303.6**	**1**	**938,303.6**	**3,707.99**	**0.000**		**0.65**
	ELD Level in 97	**155,356.9**	**5**	**31,071.4**	**122.79**	**0.000**		**0.23**
	Revised Ethnic Code	*14.7*	*1*	*14.7*	*0.06*	*0.809*		*0.01*
	Language: 1=Hisp, 2=PacR 3=Oth	*12.9*	*2*	*6.4*	*0.03*	*0.975*		*0.01*
Covariate	**Student Gender**	**3,098.4**	**1**	**3,098.4**	**12.24**	**0.000**	**-0.94**	
	Number of days absent - all students	**67,637.8**	**1**	**67,637.8**	**267.29**	**0.000**	**-0.17**	
	Whole years not in SAUSD	**66,485.2**	**1**	**66,485.2**	**262.74**	**0.000**	**-0.91**	
	Overage for grade (msng: <-1, >6)	**6,183.5**	**1**	**6,183.5**	**24.44**	**0.000**	**-1.17**	
	Special Ed - Any Service	**43,043.4**	**1**	**43,043.4**	**170.10**	**0.000**	**-7.81**	
	Move 1 or more schools	**7,677.9**	**1**	**7,677.9**	**30.34**	**0.000**	**-2.28**	
	Overall transiency (extra schls/year)	*325.9*	*1*	*325.9*	*1.29*	*0.256*	*0.67*	
	Months at Current School	*218.3*	*1*	*218.3*	*0.86*	*0.353*	*-0.01*	
	Poverty Status	*161.6*	*1*	*161.6*	*0.64*	*0.424*	*-0.30*	
Model		**2,288,602.0**	**25**	**91,544.1**	**361.76**	**0.000**		
Residual		3,616,832.5	14293	253.0				
Total		5,905,434.5	14318	412.4				

a NCE Reading in 97 by Revised Ethnic Code, Year Round Calendar Cycle, Language: 1=Hisp, 2=PacR 3=Oth, Program defined language services provided, Test language in 97 (SABE if both), ELD Level

b Covariates entered with main effects

c Due to empty cells or a singular matrix, higher order interactions have been suppressed

Table VI.22b documents the magnitude of the influence of the variables described in the table above.

The difference in scores between the English language CTBS and the Spanish SABE is not as large as in the case of reading. Only about 16 NCE points (a bit more than a year's academic attainment) separate the two tests in mathematics.

The influence of ELD Programs is similar to that for reading – students in Mainstream LEP programs are above the district average, but TBE students now get the highest scores of any program group. Students who experience both TBE and Immersion programs suffer the most in mathematics as well as reading achievement.

Traditional calendar schools lead in math achievement as they do in reading.

And English language development levels have about the same impact on math as on reading achievement. The Pre-Production students have scores nearly 10 points below average while the Redesignated students have scores more than 10 points above average.

Table VI.22b: Mean and Deviation Mathematics Test Scores on Student Groups
(1997 NCE Mathematics Scores – SABE and CTBS)

			Predicted Mean		Deviation	
		N	Unadjusted	Adjusted for Factors and Covariates	Unadjusted	Adjusted for Factors and Covariates
Revised Ethnic Code	Hispanic	13,769	33.57	33.71	-0.53	-0.40
	Asian	550	47.93	44.51	13.82	10.41
	Other	45	28.11	27.82	-5.99	-6.29
Year Round Calendar Cycle	Traditional	7,229	31.86	36.40	-2.24	2.30
	Cycle A	1,555	39.10	33.27	5.00	-0.83
	Cycle B	1,650	37.24	33.71	3.13	-0.39
	Cycle C	1,993	35.06	29.69	0.96	-4.41
	Cycle D	1,937	34.82	31.05	0.71	-3.05
Language	Hispanic	13,767	33.57	33.88	-0.53	-0.23
	Pacific Rim	584	46.87	39.46	12.77	5.36
	Other	13	24.54	33.99	-9.56	-0.12
Program	TBE	4,864	40.89	36.28	6.78	2.18
	TBE & Immersion	2,201	30.61	30.93	-3.49	-3.17
	Immersion	3,348	30.47	32.88	-3.63	-1.22
	Mainstream LEP	3,951	30.77	34.22	-3.33	0.12
Test language in 97 (SABE if both)	SABE	4,074	43.56	45.71	9.46	11.61
	CTBS	10,290	30.36	29.51	-3.74	-4.59
ELD Level in 97	Pre-Production	687	35.21	24.43	1.11	-9.67
	Early Production	1,715	41.20	29.26	7.10	-4.84
	Speech Emergence	2,683	36.31	30.59	2.21	-3.51
	Intermediate Fluency	3,278	32.11	33.78	-1.99	-0.32
	Advanced Fluency	5,392	30.96	37.62	-3.14	3.52
	Redesignated	609	41.65	44.72	7.54	10.61

a. NCE Reading in 97 by Revised Ethnic Code, Year Round Calendar Cycle, Language, Program, Test language in 97 (SABE if both), ELD Level

The "Beta Adj" column of Table VI.22a and the "R" and "R-Squared" values at the top of that table present the summary statistics for this analysis of mathematics achievement. The language in which the achievement is measured remains the most powerful single variable influencing measured attainment, but for mathematics, this variable is less than twice as powerful as the student's English language development level. Whether students attend year round schools is more powerful than their ELD program or their ethnicity and primary language status.

The overall model for mathematics is only about half as powerful as that for reading – we are able to account for only about 21.2 percent of the variations in math achievement with the variables in this model.

How about the Influence of a Child's Primary Language on Math Attainment?

Tables VI.23a & b extend the math achievement analysis to cover the level of Primary Language Development. As with reading, children's level of fluency in their primary language has a direct bearing on how well they will achieve in mathematics. As seen in Table VI.23b, the effect, once again parallels development of English proficiency, but is only about half as powerful.

As seen in the "R" and "R-Squared" values on Table VI.23a, there is little change in the overall ability to describe or predict mathematics achievement resulting from the inclusion of students' primary language development level in our predictive model (the explained variance measured by R-Squared goes up only from .212 to .215, only 3 tenths of one percent).

Table VI.23a: Analysis of Variance (ANOVA) Assessing the Impact on Mathematics Achievement including Primary Language Levels

(1997 NCE Mathematics Scores - SABE or CTBS) R = .464; R-Squared = .215

Main Effects with Covanates		Sum of Squares	df	Mean Square	F	Sig.	B	Beta Adj
	(Combined)	**721,594.7**	**30**	**24,053.2**	**64.29**	**0.000**		
	Year Round Calendar Cycle	**43,160.7**	**4**	**10,790.2**	**28.84**	**0.000**		**0.08**
	Program defined language services provided	**23,620.7**	**3**	**7,873.6**	**21.05**	**0.000**		**0.08**
	Test language in 97 (SABE if both)	**222,351.2**	**1**	**222,351.2**	**594.34**	**0.000**		**0.65**
	ELD Level in 97	**56,591.2**	**5**	**11,318.2**	**30.25**	**0.000**		**0.16**
	PLD Level in 97	**22,099.9**	**4**	**5,525.0**	**14.77**	**0.000**		**0.08**
	Revised Ethnic Code	*62.6*	*1*	*62.6*	***0.17***	*0.683*		*0.02*
	Language: 1=Hisp, 2=PacR 3=Oth	*1,839.5*	*2*	*919.8*	***2.46***	*0.086*		*0.01*
Covariate	**Student Gender**	***433.8***	***1***	***433.8***	***1.16***	***0.282***	**-2.72**	
	Number of days absent - all students	**52,540.5**	**1**	**52,540.5**	**140.44**	**0.000**	**-0.27**	
	Whole years not in SAUSD	**58,015.4**	**1**	**58,015.4**	**155.07**	**0.000**	**-2.11**	
	Overage for grade (msng: <-1, >6)	*182.5*	*1*	*182.5*	***0.49***	*0.485*	*-0.83*	
	Special Ed - Any Service	**37,083.4**	**1**	**37,083.4**	**99.12**	**0.000**	**-8.84**	
	Move 1 or more schools	**5,421.1**	**1**	**5,421.1**	**14.49**	**0.000**	**-3.17**	
	Overall transiency (extra schls/year)	*16.9*	*1*	*16.9*	*0.05*	*0.831*	*1.33*	
	Months at Current School	*1,167.7*	*1*	*1,167.7*	*3.12*	*0.077*	*0.80*	
	Poverty Status	*226.1*	*1*	*226.1*	*0.60*	*0.437*	*0.04*	
Model		**721,594.7**	**30**	**24,053.2**	**64.29**	**0.000**		
Residual		2,636,027.8	7046	374.1				
Total		3,357,622.5	7076	474.5				

a NCE Reading in 97 by Revised Ethnic Code, Year Round Calendar Cycle, Language: 1=Hisp, 2=PacR 3=Oth, Program defined language services provided, Test language in 97 (SABE if both), ELD Level

b Covariates entered with main effects

c Due to empty cells or a singular matrix, higher order interactions have been suppressed

Table VI.23b: Mean and Deviation Mathematics Test Scores with PLD (1997 NCE Reading Scores -- SABE and CTBS)						
			Predicted Mean		Deviation	
		N	Unadjusted	Adjusted for Factors and Covariates	Unadjusted	Adjusted for Factors and Covariates
Revised Ethnic Code	Hispanic	6,957	38.33	38.40	-0.11	-0.04
	Asian	112	45.55	41.01	7.11	2.57
	Other	8	38.38	38.38	-0.07	-0.07
Year Round Calendar Cycle	Traditional	1,519	38.61	42.70	0.16	4.25
	Cycle A	1,263	41.08	38.84	2.63	0.39
	Cycle B	1,335	38.74	38.73	0.29	0.28
	Cycle C	1,553	36.70	35.03	-1.75	-3.42
	Cycle D	1,407	37.56	37.01	-0.89	-1.44
Language	Hispanic	6,954	38.33	38.28	-0.12	-0.17
	Pacific Rim	122	45.52	48.13	7.07	9.68
	Other	1	1.00	8.44	-37.45	-30.01
Program	TBE	4,350	42.22	39.70	3.77	1.26
	TBE & Immersion	1,711	32.08	35.29	-6.37	-3.16
	immersion	694	33.44	39.69	-5.01	1.24
	Mainstream LEP	322	32.16	35.58	-6.29	-2.87
Test language in 97 (SABE if both)	SABE	3,673	45.05	46.56	6.61	8.11
	CTBS	3,404	31.31	29.69	-7.13	-8.75
ELD Level in 97	Pre-Production	489	35.25	30.60	-3.20	-7.84
	Early Production	1,460	43.74	36.63	5.29	-1.81
	Speech Emergence	2,072	39.89	37.25	1.45	-1.20
	Intermediate Fluency	2,010	34.80	39.52	-3.64	1.08
	Advanced Fluency	759	34.79	43.20	-3.65	4.75
	Redesignated	287	41.70	49.57	3.26	11.13
PLD Level in 97	Pre-Production	84	32.37	36.87	-6.08	-1.58
	Early Production	417	34.06	31.94	-4.38	-6.51
	Speech Emergence	1,931	40.30	37.39	1.85	-1.05
	Intermediate Fluency	3,175	39.20	38.84	0.76	0.39
	Advanced Fluency	1,470	35.96	40.91	-2.48	2.47
a. NCE Reading in 97 by Revised Ethnic Code, Year Round Calendar Cycle, Language, Program, Test language in 97 (SABE if both), ELD Level						

Assessing Factors Influencing Student Engagement in the Schools

In previous sections of this report we have looked at student absenteeism as a possible source of reduced achievement and as a factor that might slow the development of English language fluency. As noted, absenteeism does play a statistically reliable, if quite modest role in predicting student language development and achievement. In the final series of tables in this report, we turn to examining whether, treating absenteeism as a measure of student engagement in their schooling District programs can be found to play any significant role in raising student engagement and reducing absenteeism.

Tables VI.24a and VI.24b present the same type of multi-variate statistical analysis of absenteeism as was previously applied to reading and mathematics achievement.

Table VI.24a: Analysis of Variance (ANOVA) Assessing the Impact on Student Absenteeism

(Number of Days Absent -- All Students) R = .463; R-Squared = .215

Main Effects with Covanates		Sum of Squares	df	Mean Square	F	Sig.	B	Beta Adj
	(Combined)	**888,088.1**	**25**	**35,523.5**	**189.30**	**0.000**		
	Year Round Calendar Cycle	**9,524.6**	**4**	**2,381.2**	**12.69**	**0.000**		**0.065**
	Program defined language services provided	**6,301.2**	**3**	**2,100.4**	**11.19**	**0.000**		**0.052**
	Test language in 97 (SABE if both)	**4,838.8**	**1**	**4,838.8**	**25.79**	**0.000**		**0.045**
	ELD Level in 97	**16,070.6**	**5**	**3,214.1**	**17.13**	**0.000**		**0.071**
	Revised Ethnic Code	*284.1*	*1*	*284.1*	*1.51*	*0.219*		*0.032*
	Language: 1=Hisp, 2=PacR 3=Oth	*618.2*	*2*	*309.1*	*1.65*	*0.193*		*0.048*
Covariate	*Student Gender*	*69.2*	*1*	*69.2*	*0.37*	*0.544*	*0.13*	
	Whole years not in SAUSD	**58,960.0**	**1**	**58,960.0**	**314.19**	**0.000**	**0.77**	
	Overage for grade (msng: <-1, >6)	**130,084.9**	**1**	**130,084.9**	**693.19**	**0.000**	**4.61**	
	Special Ed - Any Service	*155.8*	*1*	*155.8*	*0.83*	*0.362*	*0.37*	
	Move 1 or more schools	**38,385.2**	**1**	**38,385.2**	**204.55**	**0.000**	**4.51**	
	Overall transiency (extra schls/year)	**879.6**	**1**	**879.6**	**4.69**	**0.030**	**-0.89**	
	Months at Current School	*175.0*	*1*	*175.0*	*0.93*	*0.334*	*-0.01*	
	Poverty Status	**46,420.0**	**1**	**46,420.0**	**247.36**	**0.000**	**-4.43**	
Model		888,088.1	25	35,523.5	189.30	0.000		
Residual		3,251,584.6	17327	187.7				
Total		4,139,672.7	17352	238.6				

a NCE Reading in 97 by Revised Ethnic Code, Year Round Calendar Cycle, Language: 1=Hisp, 2=PacR 3=Oth, Program defined language services provided, Test language in 97 (SABE if both), ELD Level

b Covariates entered with main effects

c Due to empty cells or a singular matrix, higher order interactions have been suppressed

As shown in Table VI.24a, absenteeism is significantly influenced by student ELD program enrollments as well as by their English language development levels. Absenteeism is not significantly different among different ethnic groups or across different primary language groups, however. As with reading and mathematics achievement, absenteeism is also influenced by a number of factors unrelated to language development. As with other issues under study, we found no differences between the rates of absence for boys and girls.

Notable among the predictor variables whose "B" scores are reported on the above table is the fact that absenteeism goes up quite sharply when students move from school to school (an average of about 4.5 days of increased absence for the moving students). Students who are overage for their grade placement are also likely to be absent for an additional 4.6 days. Poverty students, by contrast, are less likely to be absent from school. On average they miss 4.4 fewer days than other students each year.

Table VI.24b presents the magnitude of impact measures for the grouping variables whose statistical reliability was assessed in the table above.

Traditional calendar students are more likely to miss school than children on any of the four Year Round Education tracks.

These data present a reasonably clear pattern – students who are enrolled in programs specifically tailored to their needs and who are making significant progress in reaching English language fluency are more likely to attend school regularly. And, whatever the Year Round schools are doing to cope crowded conditions, it appears to be helping students to feel more engaged in school and to be more motivated to attend regularly.

Table VI.24b: Factors Influencing Student Absenteeism
(Number of Days Absent – All Students)

			Predicted Mean		Deviation	
		N	Unadjusted	Adjusted for Factors and Covariates	Unadjusted	Adjusted for Factors and Covariates
Revised Ethnic Code	Hispanic	16,690	11.33	11.27	0.16	0.10
	Asian	609	6.93	8.62	-4.24	-2.55
	All Other	54	8.76	9.66	-2.41	-1.51
Year Round Calendar Cycle	Traditional	8,751	15.75	12.13	4.58	0.96
	Cycle A	1,829	6.70	10.80	-4.47	-0.37
	Cycle B	1,959	6.84	10.54	-4.33	-0.63
	Cycle C	2,343	6.15	9.88	-5.02	-1.29
	Cycle D	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Language	Hispanic	16,689	11.34	11.32	0.17	0.15
	Pacific Rim	650	6.93	7.47	-4.24	-3.70
	Other	14	9.14	8.78	-2.03	-2.39
Program	TBE	6,140	6.75	10.58	-4.42	-0.59
	TBE & Immersion	2,471	8.26	10.58	-2.91	-0.59
	Immersion	4,013	12.48	10.90	1.31	-0.27
	Mainstream LEP	4,729	17.32	12.47	6.15	1.30
Test language in 97 (SABE if both)	SABE	4,074	6.23	9.93	-4.94	-1.24
	CTBS	13,279	12.68	11.55	1.51	0.38
ELD Level in 97	Pre-Production	1,488	9.17	12.05	-2.00	0.88
	Early Production	2,282	7.40	11.51	-3.77	0.34
	Speech Emergence	3,121	7.61	10.11	-3.56	-1.06
	Intermediate Fluency	3,692	8.81	9.89	-2.36	-1.28
	Advanced Fluency	6,122	16.67	12.32	5.50	1.15
	Redesignated	648	7.64	9.46	-3.53	-1.71

a. NCE Reading in 97 by Revised Ethnic Code, Year Round Calendar Cycle, Language, Program, Test language in 97 (SABE if both), ELD Level

Students who take their achievement tests in Spanish are also less likely to miss as many days of school.

With regard to ELD program assignments, students in any of the programs offering specific language development services are significantly more likely to have regular attendance than are the students who are enrolled in Mainstream LEP classes.

The relative influence of each of the significant factors is shown in Table VI.24c. Student ELD levels provide the strongest predictor of their absenteeism rate, but this factor is closely followed by the Year Round cycle they attend and the ELD program in which they are enrolled.

As shown in Table VI.24d, the factors reviewed here explain about 21 percent of all attendance variance. This leaves a lot of unexplained attendance variation, but represents a good start toward establishing a link between school program design and student attendance.

VII. Conclusions and Recommendations

The major findings and conclusions documented in previous sections of this report are summarized in this section, and a series of recommendations offered to assist Santa Ana USD in responding appropriately to these findings. The findings and conclusions reported here should be viewed as provisional and tentative – awaiting corroboration through systematic observation of students, teachers and school site operations. Moreover, as the findings themselves make abundantly clear, the three years of data available in the District's LEP database do not cover a sufficiently long period of time to be sure that we would not find important new sources of insight and policy guidance from a more extended study. For this reason the CERC staff has carefully documented data management and analysis procedures used in this study so that they can be incorporated into an ongoing systematic review of District language development programs.

Findings and Conclusions

Findings and conclusions are summarized under five headings: a) the reliability of the student information management system, b) the nature of language development services provided to Santa Ana USD students, c) the development of English language fluency, d) the links between language learning and achievement in reading and mathematics, and e) the influence of language development on student engagement in school.

A. Conclusions Regarding Information System Reliability

1. Interviews with key District staff confirm that the nature and purposes of the District English Language Development programs are well understood and that the need for careful data reporting is appreciated.

2. The District uses a variety of methods to insure consistency in data collection and recording, including training, one-on-one assistance to teachers and distribution of guidelines defining variables and reporting procedures.

3. The District's annual Program Services survey tends to be seen by teachers primarily as a reporting device – student program adjustments are made more continuously throughout the year and are not always entered immediately into the tracking database.

4. More than 90% of the data records in all files appear to be reliable in the sense that they reflect use of the data system as designed. Some steps could be taken to improve reliability – they are discussed below, in the recommendations sub-section.

5. When teachers report on the English fluency level of students they sometimes reduce the estimated level of fluency after a student has spent some time at a higher stage. It is not possible to determine whether these reassessments result from difficulties teachers with only modest training may have in estimating proficiency, misunderstanding of the definition of various levels by some teachers or the loss in proficiencies previously attained.

6. The administrative program categories reported in the Program Services annual survey do not accurately reflect the language development services students actually receive. These administrative categories are based on a combination of program design and teacher certification factors that separate some students receiving similar services and combine some groups receiving rather different services. Thus, students are classified into language development programs on the basis of the services being provided by their teachers – Transitional Bilingual Education for those receiving native language instruction and Immersion for those receiving sheltered instruction in English. Those receiving neither are classified as "mainstream" students, those experiencing both are labeled combined TBE & Immersion.

7. Analysis of language level coding and the movement from one language level to another indicate that annual reporting of student performance is too irregular. Large numbers of students are all reported as moving from one level to another at the same time, but staffs are well aware that this movement is highly individualized.

8. While not strictly an issue of data system reliability, we note that accurate data on student program assignments, language development and specific services has been accumulating for only approximately three years. This means that it is difficult to reach definitive conclusions regarding processes that may take much longer to complete.

B. Conclusions Regarding Language Development Services for LEP Students

1. 18% of students are Native English speakers and receive no LEP services. 14% of LEP students have attained Fluent status. Of the remaining two-thirds, about half (31% of all students) are receiving TBE, 14% Immersion, and 10% combined TBE + Immersion.

2. The TBE program serves the largest number of poverty children, more than 90%, Immersion 80%, and the mainstream curriculum below the District average, between 60 and 70%.

3. Native language instruction, a substantial factor in Transitional Bilingual Programs, drops dramatically during grades 2 and 3. Santa Ana TBE programs are appropriately characterized as "Early Exit TBE Programs" because of the extent to which native language support stops after grade 3. The end of native language instructional support corresponds directly with a sharp drop in reading levels for TBE students.

4. Immersion teachers are most highly certificated overall, but the teachers in TBE programs have the widest range of certificated teachers, from highest to lowest.

C. Conclusions Regarding the Development of English Fluency

1. The average time it takes students to move from one ELD level to another depends on which ELD level the student is at.
   - At lower ELD levels (i.e. Pre-Production and Early Production) the observed median time is 15 to 18 months.
   - At higher ELD levels (i.e. Intermediate and Advanced Fluency) the observed median time is 28 to 31 months.
   - Thus it is estimated that achieved full language fluency, on average, takes at least five to eight years (far longer than typically reported in the research literature).

2. Factors such as grade level, ethnicity, special education, movement between schools, teacher characteristics and school cycles significantly influence the rate of language development.
   - As children advance in grade the movement through various stages slows down.
   - LEP students from Asian countries and non-Hispanic backgrounds move slower between language development levels than Hispanics.
   - Students who move from one school to another at least once are slower to advance in ELD levels.
   - The higher the teacher's education the more positive impact it has on language acquisition rate at both Pre-Production and Advance Fluency Redesignation.
   - Year Round schools, when compared with traditional calendar schools have consistently positive results during the middle stages of language acquisition and generally lower rates of movement at the lowest and highest levels.

3. Students in either Transitional Bilingual Education or English Language Immersion programs make substantially more rapid progress toward English fluency than do those who remain in the educational mainstream program.

4. Students enter Transitional Bilingual Education programs with significantly lower levels of English fluency (a full language development level below their peers in other programs) and these students make steady progress in closing the fluency gap during their first three years. Later in their elementary experience, however, these students tend to receive dramatically less native language support and to fall behind their peers in fluency development.

5. Language development programs differ substantially in the effectiveness with which they facilitate movement across specific stages in language learning. The TBE program tends to move students more quickly from Pre-production to Early Production and from Advanced Fluency to Redesignation, but Immersion programs are more likely to move students rapidly from Early Production to Speech Emergence.

6. The movement of middle school students across the various language development levels is typically *slower* than that for elementary students, high school students move at about the same rate as elementary students (this contrasts with current District program designs that project more rapid language fluency development in the upper grades).

D. Conclusions from an Analysis of Reading and Mathematics Achievement Data

1. There are significant differences in the achievement levels of students in the District's four language development programs.

1a. However. the achievement differences appear to be primarily due to intake, rather than program effectiveness differences, program differences are substantially reduced when demographic and school experience factors are entered into the analysis.

2. Children move from Spanish to English achievement testing at all grade levels – 50% of those moving do so by the 6th grade.

3. Factors such as movement between schools, test language, student's English Language development levels, primary Language development levels, and ELD programs are important predictors in reading attainment.
   - Students who change schools at least once in 5 years score below their non-transient peers on the reading test.
   - Students taking their Reading tests in Spanish score, on average, 30 NCE points higher than students taking their tests in English. This is the equivalent of about 2 grade levels.
   - Students do better on reading tests with each new level of English language fluency.
   - Students with higher PLD levels score higher on the Reading test.
   - LEP students in mainstream programs score higher on Reading tests than students in other bilingual programs. However, this is mostly due to student characteristics and not program differences.

4. Students' ethnicity, test language, ELD program type, school cycle, ELD level, PLD level and movement between schools have significant impact on the rate of Math attainment.
   - Students taking their Math test in Spanish score, on average, 16 NCE points higher than students taking their test in English.
   - TBE students have the highest math scores of any program group.
   - The students attending traditional calendar year schools tend to have higher in Math achievement.
   - The higher the students' ELD and PLD levels the higher they score on Math achievement test.
   - Students who change schools at least once in five years score below their non-transient peers.
   - LEP students from Asian countries score higher on the Math test than Hispanics.

5. As is typically the case, prior attainment is a powerful predictor of subsequent test scores for all students.

E. Conclusions from an Analysis of School Attendance Data

1. Students' ELD program enrollment, ELD levels, transiency rate, overage, test language, school cycle and poverty status significantly influence absenteeism.

2. The more students move between schools the more they are absent.

3. Students who are overage for their grade level are more likely to be absent from school.

4. Students in any of the programs offering specific language development services are more likely to have regular attendance than students in mainstream LEP.

5. Traditional calendar students are more likely to miss school than students of any of the four Year Round Tracks.

6. Students who take their test in Spanish miss fewer days of school than students taking their test in English.

7. Poverty students are less likely to be absent from school than students who do not receive free/reduced lunch services.

Recommendations for Action

Reviewing the overall findings from this evaluation study in the light of extended discussions with Santa Ana USD Evaluation Design Team members and the theoretical and empirical insights gleaned from a thorough review of the language development research literature, we offer 14 recommendations to the School Board and professional staff of the District.

1. ***Recommendations for Improving Language Development Prgram Effectiveness:***

1.1 Take steps to reaffirm District commitment to the two fundamental goals of education for all children: high levels of fluency in English and the highest possible academic achievement. And declare a willingness to utilize whatever program models and instructional strategies most effectively lead to the realization of these goals.

This may seem like a matter which will be taken for granted and not in need of any action by District officials. In our judgment this is not the case, however. The use of native language instruction has become so politically sensitive in recent years that many families and many teachers are fearful that decisions are being made on the basis of prejudice or political influence rather than an acceptance of the best available evidence regarding program

effectiveness and student learning outcomes. Reaffirming the willingness of the School Board and the professional staff to follow objective evidence will help maintain confidence in whatever program or policy changes are adopted.

1.2 Acknowledge the complexity of the language acquisition process, the diversity of student needs and the great variety of ways in which students learn and teachers teach. At the same time, reaffirm District respect for the acquisition of fluency in all languages and treat student fluency in a non-English language as a valued asset to both their own education and to the larger community.

Here again, many will think this to be a matter understood by everyone and not in need of explicit attention by District leaders. Our observations and our reading of the language development literature strongly indicate, however, that many groups and individuals are seeking to create or impose a single mode of learning on all students and a single approach to teaching on all teachers. While the one best way of achieving English fluency combined with optimal academic achievement may one day be discovered, the evidence in this study points to the appropriateness of tailoring educational programs to diverse student needs and learning styles.

Feeling a pressure to integrate new immigrants into the culture and the economy of Southern California, it is easy for some observers to view fluency in a language other than English as an impediment rather than an asset to learning and citizenship. In fact, however, increasing fluency in a non-English language contributes much to the ability to succeed, both in learning English and in academic achievement. Additionally, the next generation of Americans will need to be fluent in a broad array of non-English languages in order to compete successfully in a global economy. School leaders can do much to help students, their families and the larger community recognize the value of fluency in any language, and see this as a gateway to English fluency rather than a barrier.

1.3 Given the extended period of time required to reach fluency in English documented in this evaluation study and supported by other recent studies of language acquisition, the District should carefully review the scope and sequence of the curriculum in each of its language development programs to make sure that students who will take five to seven years (or even longer) to reach full fluency have an opportunity to be exposed to materials that are challenging and interesting without overwhelming their existing language skills.

As discussed at length in the body of this report, the failure to use statistical Survival Analysis to model language learning has led to a very unfortunate belief that full language fluency can be achieved by students much more rapidly than is actually the case. There is no evidence to support an argument that the time to reach full fluency in Santa Ana is being significantly retarded by weak instructional programs. While there is always room for program improvement, program analysts and evaluators have persistently and dramatically underestimated the time it takes to achieve language fluency through the use of faulty statistical models. We do not really expect English speaking students to become fluent in

some other language as a result of a two-year course of study in a secondary school, and there is not much reason to expect non-native English students in Santa Ana to move more rapidly into English fluency. Native English speakers, even the most able and most highly motivated, expect to take more than three years to be able to utilize another language for more than rudimentary social discourse. The situation is made all the more serious for native Spanish speakers in Santa Ana because of the extent to which daily social and business transactions can be conducted entirely in that language.

1.4 So long as the District seeks to utilize Transitional Bilingual Education techniques to support academic attainment for English language learners while they make the transition to English fluency, it is important to consider extending the transition period for two or more additional years to allow time for better development of English fluency.

Native language instruction in various academic subjects is discontinued in the second or third grade for most Transitional Bilingual Education students. This discontinuance of services, and the accompanying shift from Spanish to English language testing of student achievement results in about a two year loss in measured achievement for students. This dramatic loss in measured achievement for students is probably quite demoralizing, and unfairly represents their actual academic abilities. Above all, the loss in measured achievement indicates that students in these grades have still not acquired mastery of academic English language concepts and constructs sufficiently to make sure and steady learning progress in the educational mainstream.

1.5 Since children who enter Santa Ana schools sometime after their kindergarten year and those who move from one school to another, tend to be assigned to mainstream or mixed TBE and Immersion programs it would be appropriate for the District to review assignment processes and see if everything possible is being done to provide these children with the most appropriate possible educational programs.

The placement of children who start their schooling in Santa Ana is clearly being closely attended by families and the school staff. These children are being placed in programs that fit their special needs to such an extent that the various Santa Ana programs serve very different student population groups. Moreover, fitting newcomers into ongoing programs is a constant challenge to the professional staff. Nevertheless, the statistical frequency with which latecomers and highly transient students are doing less well than those who enter early and stay in one place leads us to urge special care in the placement of these children.

1.6 Since teacher characteristics, including age, education and experience play a significant role in predicting program impacts on students, the District should continue to attend closely to the placement of teachers in work assignments where they are most likely to be most helpful in facilitating both language fluency and academic attainment.

No doubt, teacher effectiveness depends more on intrinsic motivation, supportive working conditions, adequate supervision and access to needed materials than on their demographic characteristics or prior training. Nevertheless, the strength of association between teacher characteristics and program impacts suggests that assignment is an important part of an overall strategy for improving school programs.

1.7 Since all of the language development programs utilized in Santa Ana outperform the educational mainstream in facilitating both language fluency and student achievement, it is important for the District to resist pressures to prematurely discontinue programs and rely on mainstream educational services to meet student needs.

Again, there is certainly room for program improvement. And there is little doubt that some programs could be discontinued without undermining educational quality. But the evidence examined in this evaluation study clearly point to the superiority of planned language development programs over the educational mainstream.

1.8 While it is essential that students be assessed in English to determine their fluency and academic proficiency in English, the District should resist pressures to abandon testing student achievement in their native language.

Everyone should recognize that, in the long run, children need to learn how to perform academic tasks in English and to score well on English language achievement tests. Because full English fluency takes much longer than previously thought, and because students appear much less academically competent when tested in English before they have reached full fluency, it will be very difficult for the District to monitor program effects and make adjustments in academic and language development instructional programs if achievement data in students' native languages is not available.

2. ***Recommendations for Improving Data Systems Operations:***

2.1 Combine the Program Services survey with the preparation of student report cards and add elementary grade report card data to the District's electronic database. This shift in data collection would necessitate the development of a system of electronic report card preparation, which we further recommend.

There are four reasons for making this recommendation. First, by collecting student language development data every trimester it will be possible to get a much more precise estimate of how long it takes to move from one language development level to another. The current method of collecting the data through an annual survey creates a situation in which students may have advanced in English fluency several months before their movement is recorded and made available for analysis. Second, since teachers and other school site staff members generally consider program adjustments for children in relation to the end of a trimester grading period, the collection of data would be made at a time when program assignments are under active consideration and, therefore, teacher judgments freshly

considered. Third, this would relieve teachers of the burden of having to go through each student's record to prepare a report – they would be able to combine reporting with report card preparation. Finally, if this shift is accomplished in conjunction with the adoption of a system of electronic report card preparation, an important variable now missing in our evaluation study (teacher judgment regarding students' academic achievements) could be included in future program evaluations.

2.2 Harmonize secondary school course information with the collection of data regarding the specific programs and services provided in elementary school programs.

The present data collection system ends the collection of information about the specific language development techniques and services being provided with fifth grade. This makes it impossible to monitor the effectiveness of program support services into the secondary school years, where language development remains a complex and challenging educational task. If electronic report card preparation, already being utilized in the District's middle and high schools, could contain standard indicators of the language development techniques in use effective evaluation of program design options would be possible at this level.

2.3 On an annual basis, survey teachers, not about the services provided to each student, but about their current level of training in language development instruction and about their instructional practices.

A very brief survey of teacher practices would go far in permitting the District to make much more precise judgments about the effectiveness of various language development options. The current system of reporting on whether individual students receive native language, sheltered English or mainstream instruction in various subject areas is quite helpful, to be sure. In accordance with recommendation #3, however, this information would be better generated through a system that captures report card data. Attending exclusively to student services does not give a clear picture of program design and implementation. It would be helpful to know what kinds of language sheltering techniques teachers find useful, whether curriculum materials are seen as adequate to instructional needs and whether they believe Immersion or Transitional Bilingual techniques are more successful in reaching the children for whom they are responsible.

2.4 Maintain reliable records regarding student assignment to various administrative program structures but, when collecting records on language development program services, use teacher reporting categories that distinguish clearly among services, leaving the collection of information about teacher training and instructional practices to a separate data collection process.

The present District survey of Program Services classifies students into programs that are developed to meet a variety of regulations and funding requirements. Though crucially important to District administration and fiscal planning, these categories do not provide a sufficiently precise record of actual instructional services to provide a proper foundation for program evaluation. By tracking teacher training and credentialling separately from the

record of student program assignments, both administrative and program evaluation needs could be met.

2.5 Monitor more precisely the characteristics of students assigned to various instructional services. Continue to analyze the ways in which family choice and professional judgment affect how students with different characteristics and educational needs are placed in different instructional programs.

Given the ethical and professional responsibility of the District to provide the most appropriate educational setting for each student, it is not possible to approach the evaluation of language development programs by looking exclusively at the outcomes attained. We must look at the characteristics of the students enrolled in each program and then determine which programs work best for various student groups. While a substantial group of highly predictive indicators are already being collected on all students in the District, a systematic search is needed to identify the student characteristics that are most strongly linked to program effects. Student and family interests and preferences should be considered, along with better indicators of previous educational experiences and teacher judgments about student learning styles and temperaments.

3. ***Recommendations for Further Study***

3.1 It is important for the District to continue in its study of the impact of various English language development programs and services. The evaluation findings presented in this report are based on a data tracking system that has yet to collect data on an entire cohort of students passing through District schools, and no direct observations of students, teachers and school operations were made.

Santa Ana has an important role to play in the development of reliable knowledge about English language acquisition and the programs supporting academic attainment by Limited English Proficient students. Bilingual education programs have become the focus of intense political debate, and it is vitally important that this debate be conducted with reliable information. Unfortunately, the literature on bilingual education is characterized by hasty generalizations and inappropriate data analysis techniques. Santa Ana USD has constructed a truly outstanding language development data system and can play an important role in providing trustworthy data and careful analysis of the needs of English language learners. An ongoing program of research and evaluation would provide an invaluable service to the District, the State and the Nation. It could lead to informed policymaking, program development and family selection of educational opportunities for their children.

References

Baeten-Beardsmore, H. & Lebrun, N. (1991). Trilingual education in the Grand Duchy of Luxembourg. In O. Garcia (Ed.), Bilingual education: Focusschrift in honor of Joshua A Fishman (pp. 107-122). Philadelphia: John Benjamins Publishing Company.

Bratt-Paulston, C. (Ed.). (1988). International handbook of bilingualism and bilingual education. New York: Greenwood Press.

Brown, R. (1973). Development of the first language in the human species. American Psychologist, 28, 97-106.

Collier, V. P. (1989). How long? A synthesis of research on academic achievement in a second language. TESOL Quarterly, 23(3), 509-531.

Cummins, J. (1978). Metalinguistic development of children in bilingual education programs: Data from Irish and Canadian Ukrainian-English Programs. In M. Paradis (Ed.), The Fourth Lucas Forum 1977 (pp. 127-138). Columbia, SC: Hornbeam Press.

Cummins, J. (1979). Linguistic interdependence and the educational development of bilingual children. Review of Educational Research, 19, 222-251.

Cummins, J. (1980). The entry and exit fallacy in bilingual education. NABE Journal, 4(3), 25-60.

Cummins, J. (1981a). Age on arrival and immigrant second language learning in Canada: A reassessment. Applied Linguistics, 2, 132-149.

Cummins, J. (1981b). The role of primary language development in promoting educational success for language minority students. In California Department of Education (Ed.), Schooling and language minority students: A theoretical framework (pp. 3-49). Los Angeles, CA: Evaluation, Dissemination, and Assessment Center, California State University, Los Angeles.

Cummins, J. (1994). Primary language instruction and the education of language minority students. In C. Leyba (Ed.), Schooling and language minority students: A theoretical framework (pp. 3-46). (2nd. Ed.). Los Angeles, CA: Evaluation, Dissemination, and Assessment Center, California State University, Los Angeles.

Dulay, H. & Burt, M. K. (1974). Natural sequences in child second language acquisition. Language Learning, 24, 37-53.

Edelsky, C., Hudelson, S., Flores, B., Barkin, F., Altwerger, B., & Jilbert, K. (1983). Semilingualism and language deficit. Applied Linguistics, 4, 1-22.

ernhardt, E. B. & Kamil, M. L. (1995). Interpreting relationships between L1 and L2 reading: Consolidating the Linguistic threshold and the linguistic interdependence hypotheses. Applied Linguistics, 16(1), 15-34.

Fernandez, R. M. & Nielsen, F. (1986). Bilingualism and Hispanic scholastic achievement: Some baseline results. Social Science Research, 15, 43-70.

Gandára, P. (1997). Review of the research on instruction of limited English proficient students. The University of California, Davis.

Garcia, H. D. C. (1981). Bilingualism, confidence and college achievement. Center for the Social Organization of Schools: Johns Hopkins University.

Grosjean, F. (1982). Life with two languages: An introduction to bilingualism. Cambridge, MA. Harvard University Press.

Hakuta, K. (1986). The mirror of language. The debate on bilingualism. New York: Basic Books.

Hornberger, N. H. (1991). Extending enrichment bilingual education: Revisiting typologies and redirecting policy. In O. Garcia (Ed.), Bilingual education: Focusschrift in honor of Joshua A. Fishman (pp. 215-234). Philadelphia: John Benjamins Publishing Company.

Kolers, P. (1978). On the representations of experience. In D. Gerver & H. Sinaiko (Eds.), Language interpretations and communication. New York: Plenum Press.

Lessow-Hurley, J. (1996). The foundations of dual language instruction. (2nd edition). White Plains, NY: Longman.

Mackey, W. F. (1972). A typology of bilingual education. In J. A. Fishman (Ed.), Advances in the sociology of languages (pp. 413-432). The Hague: Mouton.

Mannheim, B. (1984). Una nacion acorrolada: Southern Peruvian Quechua language planning and politics in historical perspective. Language in Society, 13, 291-309.

Paivio, A. & Desrochers, A. (1980). A dual-coding approach to bilingual memory. Canadian Journal of Psychology, 34, 388-99.

Paradis, M. (1980). Language and thought in bilinguals. In W. McCormack & H. J. Izzo (Eds.), The sixth LACUS forum. Columbia, SC: Hornbeam Press.

Pease-Alvarez, L., & Winsler, A. (1994). Cuando el maestro no habla español: Children's bilingual language practices in the classroom. TESOL Quarterly, 28(3), 507-535.

Ramírez, D., Yuen, S. D., & Ramsey, D. R. (1991). Final Report: Longitudinal study of English immersion strategy, early-exit and late-exit transitional bilingual education programs for language-minority children. (Department of Education Contract No. 300-87-0156). San Mateo, CA: Aguirre International.

Richard-Amato, P. (1996). Making it happen: Interaction in the second language classroom. (2nd edition). New York: Longman.

Ruíz, R. (1984). Orientations in language planning. NABE Journal, 8, 15-34.

Selinker, L., Swain, M., & Dumas, G. (1975). The interlanguage hypothesis extended to children. Language Learning, 25, 139-52.

Shin, F. H., & Krashen, S. D. (1996). Teacher attitudes toward the principles of bilingual education and toward students' participation in bilingual programs: Same or different? Bilingual Research Journal, 20(1), 45-54.

Skutnabb-Kangas, T. & Toukomaa, P. (1976). Teaching migrant children's mother tongue and learning the language of the host country. Helsinki: The Finnish National Commission for UNESCO.

Thomas, W., & Collier, V. P. (1997). School effectiveness for language minority students. George Washington University: National Clearinghouse for Bilingual Education.

Troike, R. (1978). Research evidence for the effectiveness of bilingual education. NABE Journal, 3(1), 13-24.

Trueba, H. T. (1979). Bilingual education models: Types and designs. In H. T. Trueba & C. Barnett-Mizrahi (Eds.), Bilingual multicultural education and the professional from theory to practice (pp. 54-73). Rowley, MA: Newbury House.

APPENDIX A

Data Command Files: Data Set Definition, Variable Recoding and Computation

```
**********Comments Attendance File Definition **********
SET
  BLANKS=SYSMIS BLANKS=SYSMIS
 UNDEFINED=WARN.
DATA LIST
 FILE='c:\Share\SAUSD data\SAUSD Eng raw data\UC00AT.dat' FIXED RECORDS=1 TABLE /1
stndid 1-6 abscdte 7-12 allday 13
 -13(A) period0 14-14(A) period1 15-15(A) period2 16-16(A) period3 17-17(A)
 period4 18-18(A) period5 19-19(A) period6 20-20(A) period7 21-21(A) period8
 22-22(A) period9 23-23(A).
EXECUTE.
Value labels allday period0 period1 period2 period3 period4
period5 period6 period7 period8 period9 'A' 'Unexcused Absence'
                                'B' 'School Business'
                                'C' 'Contract'
                                'D' 'Funeral'
                                'E' 'Excused Personal'
                                'F' 'Field Trip'
                                'H' 'Homebound'
                                'I' 'Illness'
                                'J' 'Jury Duty'
                                'K' 'Tardy UnExcused'
                                'L' 'Tardy'
                                'M' 'Medical Appointment'
                                'N' 'No show'
                                'Q' 'Quarantine'
                                'R' 'Remove Code'
                                'S' 'Suspension'
                                'T' 'Truant'
                                'U' 'Unaccounted'
                                'W' 'Withold ADA'
                                'X' 'Excused Absence'
                                'UV' 'Elem and MS Unverified Abscence'
                                'TR' 'Elem and MS Truant'
                                'TA' 'Elem and MS Tardy'
                                'O' 'Other'
                                'UN' 'MS unexcused'
                                'V' 'Activity'.

**********Comments: Recoding Abscenses for elementary and Middle**********
DO IF (schltyp=1).
RECODE
 allday period0 period1 period2 period3 period4 period5 period6 period7
 period8 period9 ('A'='UV') ('H'='TR') ('T'='TA').
END IF.
EXECUTE.
DO IF (schlnme=78).
RECODE
 allday period0 period1 period2 period3 period4 period5 period6 period7
 period8 period9 ('A'='UV') ('O'='O') ('R'='TR') ('T'='TA') ('U'='UN')
 ('V'='V').
END IF.
EXECUTE.
```

```
DO IF (schlnme=80)
RECODE
 allday period0 period1 period2 period3 period4 period5 period6 period7
 period8 period9 ('A'='UV') ('O'='O') ('R'='TR') ('T'='TA') ('U'='UN')
 ('V'='V')
END IF
EXECUTE .
DO IF (schlnme=83) .
RECODE
 allday period0 period1 period2 period3 period4 period5 period6 period7
 period8 period9 ('A'='UV') ('O'='O') ('R'='TR') ('T'='TA') ('U'='UN')
 ('V'='V') .
END IF .
EXECUTE .
DO IF (schlnme=87) .
RECODE
 allday period0 period1 period2 period3 period4 period5 period6 period7
 period8 period9 ('A'='UV') ('O'='O') ('R'='TR') ('T'='TA') ('U'='UN')
 ('V'='V') .
END IF .
EXECUTE .

**********Comments: Computing number of absences, unexcused and tardiness **********
COUNT
 aldyabs = allday ('B') allday ('C') allday ('D') allday ('E')
 allday ('F') allday ('H') allday ('I') allday ('J') allday ('M')
 allday ('A') allday ('Q') allday ('S') allday ('T')
 allday ('U') allday ('W') allday ('X') allday ('UV') allday ('TR')
  allday ('O') allday ('UN') allday ('V') .
VARIABLE LABELS aldyabs 'All day abscences' .
EXECUTE .
COUNT
 Prdabs = period0 period1 period2 period3 period4 period5 period6 period7
 period8 ('B') period0 period1 period2 period3 period4 period5 period6
 period7 period8 ('C') period0 period1 period2 period3 period4 period5
 period6 period7 period8 ('D') period0 period1 period2 period3 period4
 period5 period6 period7 period8 ('E') period0 period1 period2 period3
 period4 period5 period6 period7 period8 ('F') period0 period1 period2
 period3 period4 period5 period6 period7 period8 ('H') period0 period1
 period2 period3 period4 period5 period6 period7 period8 ('I') period0
 period1 period2 period3 period4 period5 period6 period7 period8 ('J')
 period0 period1 period2 period3 period4 period5 period6 period7 period8
 ('M') period0 period1 period2 period3 period4 period5 period6 period7
 period8 ('A') period0 period1 period2 period3 period4 period5 period6
 period7 period8 ('N') period0 period1 period2 period3 period4 period5
 period6 period7 period8 ('Q') period0 period1 period2 period3 period4
 period5 period6 period7 period8 ('S') period0 period1 period2 period3
 period4 period5 period6 period7 period8 ('T') period0 period1 period2
 period3 period4 period5 period6 period7 period8 ('U') period0 period1
 period2 period3 period4 period5 period6 period7 period8 ('W') period0
 period1 period2 period3 period4 period5 period6 period7 period8 ('X')
 period0 period1 period2 period3 period4 period5 period6 period7 period8
 ('UV') period0 period1 period2 period3 period4 period5 period6 period7
 period8 ('TR') period0 period1 period2 period3 period4 period5 period6
```

```
  period7 period8 ('O') period0 period1 period2 period3 period4 period5
  period6 period7 period8 ('UN') period0 period1 period2 period3 period4
  period5 period6 period7 period8 ('V') .
VARIABLE LABELS Prdabs 'Period abscences'
EXECUTE .
COUNT
  aldyunex = allday ('A') allday ('S') allday ('T')
  allday ('U') allday ('UV') allday ('TR') allday ('UN') .
VARIABLE LABELS aldyunex 'all day unaccounted abscences' .
EXECUTE .
COUNT
  aldytard = allday ('K') allday ('L') allday ('TA') .
VARIABLE LABELS aldytard 'All day tardy' .
EXECUTE .

**********Comments: Recoding all day abscences for middle and secondary into periods**********
DO IF (schltyp gt 1) .
RECODE
  aldyabs
  (1=7) INTO Nwaldabs .
END IF .
EXECUTE .
DO IF (schltyp gt 1) .
RECODE
  aldyunex
  (1=7) INTO Nwaldunx .
END IF .
EXECUTE .

COMPUTE MsHsPabs = SUM(nwaldabs,prdabs) .
EXECUTE .
COMPUTE MsHsPunx = SUM(nwaldunx,prdunex) .
EXECUTE .

DO IF (schltyp=1) .
RECODE
  aldyabs
  (1=1) INTO Elemabs .
END IF .
VARIABLE LABELS Elemabs 'Number of abscensec for elementary students'.
EXECUTE .
DO IF (schltyp=1) .
RECODE
  aldyunex
  (1=1) INTO Elemunx .
END IF .
VARIABLE LABELS Elemunx 'Unaccounted Abscences for elementary students'.
EXECUTE .
DO IF (schltyp=1) .
RECODE
  aldytard
  (1=1) INTO elemtrdy .
END IF .
EXECUTE .
```

```
DO IF (schltyp gt 1) .
RECODE
 aldytard
 (1=1) INTO MsHstrd .
END IF .
VARIABLE LABELS MsHstrd 'Number of tardinesses for Ms and Hs'.
EXECUTE .
RECODE
 mshspabs
 (0=SYSMIS) (1 thru 8=1) INTO mshsdabs .
VARIABLE LABELS mshsdabs 'Number of days middle and High school absent'.
EXECUTE .
RECODE
 mshspunx
 (0=SYSMIS) (1 thru 8=1) INTO mshsdunx .
VARIABLE LABELS mshsdunx 'Number of days of unaccounted abscences for Middle'+
' School and High School students'.
EXECUTE .
RECODE
 prdtard
 (0=SYSMIS) (1 thru 6=1) INTO MsHsdtrd .
EXECUTE .

AGGREGATE
 /OUTFILE='c:\Share\attnAGGR2.SAV'
 /BREAK=stndid
 /elemab_1 = SUM(elemabs) /elemtr_1 = SUM(elemtrdy) /elemun_1 =
 SUM(elemunx) /mshspa_1 = SUM(mshspabs) /mshspu_1 = SUM(mshspunx) /mshsda_1
 = SUM(mshsdabs) /mshsdu_1 = SUM(mshsdunx) /mshsdt_1 = SUM(mshsdtrd)
 /prdtar_1 = SUM(prdtard).
```

```
********************************* Comments: Test Score File Definition*****************************
SET
  BLANKS=SYSMIS BLANKS=SYSMIS
 UNDEFINED=WARN.
DATA LIST
 FILE='c:\Share\SAUSD data\SAUSD Eng raw data\testingf.dat' FIXED RECORDS=1
 TABLE /1 stndid 1-6 tname 7-10(A) subtname 11-12(A) tdate 13-18 grdlvlt 19
-20 (A) tlvl 21-22(A) tform 23-23(A) rawscore 24-27 grdequiv 28-31(A) nrmlcurv
 32-33 nprcntl 34-35 scalescr 36-39 .
EXECUTE.

********************************* Comments: CTBS and SABE selection *************************

Select if (subtname NE 'LE').
Select if (subtname NE 'LM').
Select if (subtname NE 'LS').
Select if (subtname NE 'MA').
Select if (subtname NE 'MC').
Select if (subtname NE 'RC').
Select if (subtname NE 'RV').
Select if (subtname NE 'S').
Select if (subtname NE 'SO').
Select if (subtname NE 'SS').
Select if (subtname NE 'VR').
Select if (subtname NE 'WA').
Select if (subtname NE 'MA').
Select if (subtname NE 'MC').
Select if (subtname NE 'P').
Select if (subtname NE 'RC').
Select if (subtname NE 'RV').
Select if (subtname NE 'CM').
Select if (subtname NE 'ES').
Select if (subtname NE 'PL').
Select if (subtname NE 'R').
Select if (subtname NE 'M').
Select if (subtname NE 'CM').
Select if (subtname NE 'LM').
Select if (subtname NE 'M').
Select if (subtname NE 'R').
Select if (subtname NE 'CM').
Select if (subtname NE 'LM').
Select if (subtname NE 'M').
Select if (subtname NE 'R').


********************************* Comments: Test Type Recoding ******************************
DO IF (tname='CTBS').
RECODE
 subtname ('LT'='LTC94') ('MT'='MTC94') ('RT'='RTC94') ('TB'='TBC94').
END IF.
EXECUTE.
```

```
DO IF (tname='SABE').
RECODE
 subtname ('LT'='LTS94') ('MT'='MTS94') ('RT'='RTS94') ('TB'='TBS94') .
END IF.
EXECUTE.
RECODE
 subtname ('LTC94'='LTC9402') ('MTC94'='MTC9402') ('RTC94'='RTC9402')
 ('TBC94'='TBC9402') ('LTS94'='LTS9402') ('MTS94'='MTS9402')
 ('RTS94'='RTS9402') ('TBS94'='TBS9402').
EXECUTE.
RECODE
 subtname ('LTC94'='LTC9403') ('MTC94'='MTC9403') ('RTC94'='RTC9403')
 ('TBC94'='TBC9403') ('LTS94'='LTS9403') ('MTS94'='MTS9403')
 ('RTS94'='RTS9403') ('TBS94'='TBS9403') .
EXECUTE.
RECODE
 subtname ('LTC94'='LTC9410') ('MTC94'='MTC9410') ('RTC94'='RTC9410')
 ('TBC94'='TBC9410') ('LTS94'='LTS9410') ('MTS94'='MTS9410')
 ('RTS94'='RTS9410') ('TBS94'='TBS9410') .
EXECUTE.
RECODE
 subtname ('LTC94'='LTC9412') ('MTC94'='MTC9412') ('RTC94'='RTC9412')
 ('TBC94'='TBC9412') ('LTS94'='LTS9412') ('MTS94'='MTS9412')
 ('RTS94'='RTS9412') ('TBS94'='TBS9412') .
EXECUTE.
DO IF (tname='CTBS').
RECODE
 subtname ('LT'='LTC95') ('MT'='MTC95') ('RT'='RTC95') ('TB'='TBC95') .
END IF.
EXECUTE.
DO IF (tname='SABE').
RECODE
 subtname ('LT'='LTS95') ('MT'='MTS95') ('RT'='RTS95') ('TB'='TBS95').
END IF.
EXECUTE.
RECODE
 subtname ('LTC95'='LTC9502') ('MTC95'='MTC9502') ('RTC95'='RTC9502')
 ('TBC95'='TBC9502') ('LTS95'='LTS9502') ('MTS95'='MTS9502')
 ('RTS95'='RTS9502') ('TBS95'='TBS9502') .
EXECUTE.
RECODE
 subtname ('LTC95'='LTC9504') ('MTC95'='MTC9504') ('RTC95'='RTC9504')
 ('TBC95'='TBC9504') ('LTS95'='LTS9504') ('MTS95'='MTS9504')
 ('RTS95'='RTS9504') ('TBS95'='TBS9504') .
EXECUTE.
RECODE
 subtname ('LTC95'='LTC9511') ('MTC95'='MTC9511') ('RTC95'='RTC9511')
 ('TBC95'='TBC9511') ('LTS95'='LTS9511') ('MTS95'='MTS9511')
 ('RTS95'='RTS9511') ('TBS95'='TBS9511') .
EXECUTE.
```

```
RECODE
 subtname ('LTC95'='LTC9512') ('MTC95'='MTC9512') ('RTC95'='RTC9512')
 ('TBC95'='TBC9512') ('LTS95'='LTS9512') ('MTS95'='MTS9512')
 ('RTS95'='RTS9512') ('TBS95'='TBS9512') .
EXECUTE
DO IF (tname='CTBS') .
RECODE
 subtname ('LT'='LTC96') ('MT'='MTC96') ('RT'='RTC96') ('TB'='TBC96') .
END IF .
EXECUTE .
DO IF (tname='SABE') .
RECODE
 subtname ('LT'='LTS96') ('MT'='MTS96') ('RT'='RTS96') ('TB'='TBS96').
END IF .
EXECUTE .
RECODE
 subtname ('LTC96'='LTC9602') ('MTC96'='MTC9602') ('RTC96'='RTC9602')
 ('TBC96'='TBC9602') ('LTS96'='LTS9602') ('MTS96'='MTS9602')
 ('RTS96'='RTS9602') ('TBS96'='TBS9602') .
EXECUTE.
RECODE
 subtname ('LTC96'='LTC9604') ('MTC96'='MTC9604') ('RTC96'='RTC9604')
 ('TBC96'='TBC9604') ('LTS96'='LTS9604') ('MTS96'='MTS9604')
 ('RTS96'='RTS9604') ('TBS96'='TBS9604') .
EXECUTE .

********** Comments: Transposing Data **********

File Type Grouped
File='C:\Share\SAUSD data\english only data\englscalescore960424.dat'
Record=#rec 7-13(A) case=stndid 1-6
Wild=nowarn
Missing=nowarn.
Record Type 'LTC9604 '.
Data List /LTC9604 17-18.
Record Type 'MTC9604'.
Data List /MTC9604 17-18.
Record Type 'RTC9604'.
Data List /RTC9604 17-18.
Record Type 'TBC9604 '.
Data List /TBC9604 17-18.
Record Type 'LTS9604'.
Data List /LTS9604 17-18.
Record Type 'MTS9604'.
Data List /MTS9604 17-18.
Record Type 'RTS9604 '.
Data List /RTS9604 17-18.
Record Type 'TBS9604'.
Data List /TBS9604 17-18.
Record type other skip.
End File Type.
Execute.
```

```
**********Comments: Demographic File Definition**********
SET
  BLANKS=SYSMIS BLANKS=SYSMIS
 UNDEFINED=WARN.
DATA LIST
  FILE='c:\Share\SAUSD data\LEP and FEP data\student.file;1'FIXED RECORDS=1 TABLE /1
 stid 1-6 address1 7-31(A) address2 32-41(A) city 42-59(A) state 60-61(A)
 zip 62-70 bdate 71-76 bcity 77-94(A) bstate 95-97(A) sex 98-98(A) ethnic 99
-99 school 100-101(A) language 102-103 grade 104-105 teacher 106-135(A)
 strtdte 136-141 lncdte 142-147 lnchcde 148-148(A) hndicap 149-149(A)
 specled 150-152 entrdte1 153-158 entrcde1 159-161(A) entrdte2 162-167
 entrcde2 168-170(A) entrdte3 171-176 entrcde3 177-179(A) leavdte1 180-185
 leavcde1 186-188(A) leavdte2 189-194 leavcde2 195-197(A) leavdte3 198-203
 leavcde3 204-206(A) .
EXECUTE.

Variable Labels lnchcde 'Lunch code'/
Hndicap 'Handicap'/
specled 'Special Education'/
entrcde1 'Codes for entering school the first time'/
entrcde2 'Codes for entering school the second time'/
Leavcde1 'Codes for leaving school the first time'/
BDate 'Birth date'/
Strtdte 'Date Started in district'/
Entrdte1 'Date entered in school the first time'/
Entrdte2 'Date entered in school second time'/
Leavdte1 'Date Left school'.

Value Labels Sex 'M' 'Male'
'F' 'Female'/
Ethnic 1 'Hispanic'
 2 'White'
 3 'Black'
 4 'Asian'
 5 'Native American'
 6 'Filipino'
 7 'Pacific Islander'/
School 'A6' 'Adams cycl A'
 'A7' 'Adams cycle b'
 'A8' 'Adams cycle C'
 'A9' 'Adams cylce D'
 'S1' 'Carver Cylce A'
 'S2' 'Carver Cycle B'
 'S3' 'Carver Cycle C'
 'S4' 'Carver Cycle D'
 'A1' 'Diamond Cycle A'
 'A2' 'Diamond Cycle B'
 'A3' 'Diamond Cycle C'
 'A4' 'Diamond Cycle D'
 'B1' 'Edison Cycle A'
 'B2' 'Edison Cycle B'
 'B3' 'Edison Cycle C'
 'B4' 'Edison Cycle D'
 '62' 'Franklin T'
```

'C4' 'Franklin Cycle D'
'D1' 'Fremont Cycle A'
'D2' 'Fremont Cycle B'
'D3' 'Fremont Cycle C'
'D4' 'Fremont Cycle D'
'R1' 'Garfield Cycle A'
'R2' 'Garfield Cycle B'
'R3' 'Garfield Cycle C'
'R4' 'Garfield Cycle D'
'70' 'Greenville T'
'55' 'Harvey T'
'I1' 'Heninger Cycle A'
'I2' 'Heningger Cycle B'
'I3' 'Heninger Cycle C'
'I4' 'Heninger Cycle D'
'O1' 'Hoover Cycle A'
'O2' 'Hoover Cycle B'
'O3' 'Hoover Cycle C'
'O4' 'Hoover Cycle D'
'F1' 'Jackson Cycle A'
'F2' 'Jackson Cycle B'
'F3' 'Jackson Cycle C'
'F4' 'Jackson Cycle D'
'58' 'Jefferson T'
'W1' 'Kennedy Cycle A'
'W2' 'Kennedy Cycle B'
'W3' 'Kennedy Cycle C'
'W4' 'Kennedy Cycle D'
'98' 'King T'
'C6' 'King Cycle A'
'C7' 'King Cycle B'
'C8' 'King Cycle C'
'C9' 'King Cycle D'
'G1' 'Lincoln Cycle A'
'G2' 'Lincoln Cycle B'
'G3' 'Lincoln Cycle C'
'G4' 'Lincoln Cycle D'
'H1' 'Lowell cycle A'
'H2' 'Lowell cycle B'
'H3' 'Lowell cycle C'
'H4' 'Lowell cycle D'
'J1' 'Madison Cycle A'
'J2' 'Madison Cycle B'
'J3' 'Madison cycle C'
'J4' 'Madison cycle D'
'K1' 'Martin cycle A'
'K2' 'Martin Cycle B'
'K3' 'Martin Cycle C'
'K4' 'Martin Cycle D'
'77' 'Mitchell T'
'64' 'Monroe'
'L1' 'Montevista cycle A'
'L2' 'Montevista Cycle B'
'L3' 'Montevista Cycle C'

'L4' 'Montevista Cycle D'
'66' 'Muir T'
'P1' 'Pio Pico cycle A'
'P2' 'Pio Pico cycle B'
'P3' 'Pio Pico cycle C'
'P4' Pio Pico cycle D'
'75' 'Remington T'
'M1' 'Roosevelt cycle A'
'M2' 'Roosevelt cycle B'
'M3' 'Roosevelt Cycle C'
'M4' 'Roosevelt cycle D'
'68' 'Santiago T'
'H6' 'Sepulveda Cycle A'
'H7' 'Sepulveda Cycle B'
'H8' 'Sepulveda Cycle C'
'H9' 'Sepulveda Cycle D'
'73' 'Taft T'
'42' Thorpe T'
'B6' 'Walker Cycle A'
'B7' 'Walker Cycle B'
'B8' 'Walker Cycle C'
'B9' 'Walker Cycle D'
'Z1' 'Washington cycle A'
'Z2' 'Washington cycle B'
'Z3' 'Washington cycle C'
'Z4' 'Washington Cycle D'
'N1' 'Wilson Cycle A'
'N2' 'Wilson Cycle B'
'N3' 'Wilson Cycle C'
'N4' 'Wilson Cycle D'
'D6' 'Carr Cycle A'
'D7' 'Carr Cycle B'
'D8' 'Carr Cycle C'
'D9' 'Carr Cycle D'
'L6' 'Lathrope cycle A'
'L7' 'Lathrope cycle B'
'L8' 'Lathrope cycle C'
'L9' 'Lathrope cycel D'
'79' 'MacArthur T'
'85' 'Macfadden'
'S6' 'Sierra cycle A'
'S7' 'Sierra Cycle B'
'S8' 'Sierra Cycle C'
'S9' 'Sierra Cycle D'
'E6' 'Spurgeon Cycle A'
'E7' 'Spurgeon Cycle B'
'E8' 'Spurgeon Cycle C'
'E9' 'Spurgeon Cycle D'
'84' 'Willard T'
'F9' 'Indpend stdy'
'91' 'Ceaser Chavez'
'90' 'Century'
'76' 'Mount View'
'86' 'Saddleback'

'81' 'Santa Ana'
'82' 'Valley'
'27' 'ROP'
'F7' 'Phoenix House int'
'F8' 'Phoenix House HS'
'26' 'Indpependent stdy hs'
'EX' 'Expelled students'/
Language 90 'LEP other'
33 'LEP American Indian'
11 'LEP Arabic'
37 'LEP Armenian'
39 'LEP Burmese'
13 'LEP Cantonese'
81 'LEP Chinese Other'
41 'LEP Croatian'
43 'LEP Dutch'
0 'English Only'
15 'LEP Farsi'
83 'LEP Filipino other'
45 'LEP French'
47 'LEP German'
49 'LEP Greek'
51 'LEP Guamanian'
53 'LEP Hebrew'
55 'LEP Hindi'
9 'LEP Hmong'
57 'LEP Hungarian'
17 'LEP Ilocano'
59 'LEP Indonesian'
61 'LEP Italian'
19 'LEP Japanese'
5 'LEP Khmer Cambodian'
21 'LEP Korean'
7 'LEP Lao'
35 'LEP Lau Language group'
23 'LEP Mandarin'
77 'LEP Pashto'
79 'LEP Polish'
25 'LEP Portugese'
63 'LEP Punjabi'
65 'LEP Russian '
27 'LEP Samoan'
67 'LEP Serbian'
1 'LEP Spanish'
29 'LEP Tagalog'
69 'LEP Thai'
73 'LEP Tongan'
71 'LEP Turkish'
31 'LEP Urdu'
3 'LEP Vietnamese'
75 'LEP Visayan'
91 'FEP other'
34 'FEP American Indian'
12 'FEP Arabic'

38 'FEP Armenian'
40 'FEP Burmese'
14 'FEP Cantonese'
82 'FEP Chinese Other'
42 'FEP Croatian'
44 'FEP Dutch'
16 'FEP Farsi'
84 'FEP Filipino other'
46 'FEP French'
48 'FEP German'
50 'FEP Greek'
52 'FEP Guamanian'
54 'FEP Hebrew'
56 'FEP Hindi'
10 'FEP Hmong'
58 'FEP Hungarian'
18 'FEP Ilocano'
60 'FEP Indonesian'
62 'FEP Italian'
20 'FEP Japanese'
6 'FEP Khmer Cambodian'
22 'FEP Korean'
8 'FEP Lao'
36 'FEP Lau Language group'
24 'FEP Mandarin'
78 'FEP Pashto'
80 'FEP Polish'
26 'FEP Portugese'
64 'FEP Punjabi'
66 'FEP Russian '
28 'FEP Samoan'
68 'FEP Serbian'
2 'FEP Spanish'
30 'FEP Tagalog'
70 'FEP Thai'
74 'FEP Tongan'
72 'FEP Turkish'
32 'FEP Urdu'
4 'FEP Vietnamese'
76 'FEP Visayan'/
Lnchcde 'A' 'Free AFDC'
'B' 'Temp reduced'
'C' 'Denied'
'F' 'Free Lunch'
'P' 'Paid Denied'
'R' 'Reduced Lunch'
'T' 'Temp Free'/
Hndicap 'X' 'Yes'/
specied 410 'Designated instruction and services'
420 'Resource Specialist Program RSP'
430 'Special Day classess public'
431 'Special Day classess public sep'
440 'Non public school day NPS'
441 'Non public school residential CA'

```
442 'Non public schoo residential non CA'
471 'Public residential school'
473 'Correctional facility'
475 'State Hospital'
476 'Development Center'
477 'Community Project'
479 'Teaching Hospital'/
entrcde1 entrcde2 entrcde3 'BP' 'Between districts permit'
'NC' 'New Student out of country'
'NS' 'New Student out of State'
'RA' 'Returning from alternative program'
'RE' 'Regular enrollment'
'RN' 'Returning not currently enrolled'
'RS' 'Re enter to a specific school'
'TC 'Transfer from another CA school'
'RP' 'Transfer at parents request'
'WS' 'Moved within SAUSD'/
Leavcde1 Leavcde2 Leavcde3 'DE' 'Deceased'
'DR' 'Dropout'
'EP' 'Expelled'
'ET' 'Exempt parents request'
'FW' 'Full time work experience'
'GR' 'Graduated'
'HE' 'Health'
'HT' 'Home Teaching'
'LC' 'Moved out of Country'
'LS' 'Moved out of State'
'MC' 'Moved within State'
'MG' 'Mid year graduate'
'MV' 'Moved'
'NS' 'No show'
'PA' 'GED or CHSPE Passed'
'PB' 'Inter district Permit'
'PW' 'Intra district Permit'
'RC' 'Released from compulsory education'
'RU' 'Runaway'
'ST' 'Student record requested'
'TA' 'Transfer to adult education'
'TP' 'Transfer to alternative program'
'UN' 'Unknown'
'WS' 'Moved within district'.

********** Comment: Date Computations**********

COMPUTE Byear = TRUNC(Bdate/10000) .
VARIABLE LABELS Byear 'Birthday Year' .
EXECUTE .
COMPUTE Bmonth = TRUNC(Bdate/100)-(100*Byear).
VARIABLE LABELS Bmonth 'Birthday Month' .
EXECUTE .
COMPUTE BDay = (Bdate-(10000*Byear)-(100*Bmonth)).
VARIABLE LABELS BDay 'Birthday Day' .
EXECUTE
```

```
COMPUTE Brthdte = DATE.MDY(bmonth,bday,byear) .
EXECUTE
Compute Strtyr= TRUNC(strtdte/10000) .
VARIABLE LABELS Strtyr 'Year started'
EXECUTE .
COMPUTE Strtmo = TRUNC(strtdte/100)-(100*Strtyr).
VARIABLE LABELS Strtmo 'Month started' .
EXECUTE .
COMPUTE strtday = (strtdte-(10000*strtyr)-(100*Strtmo)).
VARIABLE LABELS strtday 'Day Started' .
EXECUTE .
COMPUTE Datestrt = DATE.MDY(strtmo,strtday,strtyr) .
EXECUTE .
Compute lnchyr= TRUNC(lncdte/10000) .
VARIABLE LABELS lnchyr 'Year luch aid started' .
EXECUTE .
COMPUTE lnchmo = TRUNC(lncdte/100)-(100*lnchyr).
VARIABLE LABELS lnchmo 'Month lunch aid started' .
EXECUTE .
COMPUTE lnchday = (lncdte-(10000*lnchyr)-(100*lnchmo)).
VARIABLE LABELS lnchday 'Day lunch aie Started' .
EXECUTE .
COMPUTE Dateinch = DATE.MDY(lnchmo,lnchday,lnchyr) .
EXECUTE .
Compute entr1yr= TRUNC(entrdte1/10000) .
VARIABLE LABELS entr1yr 'Enter1 year' .
EXECUTE .
COMPUTE entr1mo = TRUNC(entrdte1/100)-(100*entr1yr).
VARIABLE LABELS entr1mo 'enter1 month' .
EXECUTE .
COMPUTE entr1day = (entrdte1-(10000*entr1yr)-(100*entr1mo)).
VARIABLE LABELS entr1day 'entr1day' .
EXECUTE .
COMPUTE Datentr1 = DATE.MDY(entr1mo,entr1day,entr1yr) .
EXECUTE .
Compute entr2yr= TRUNC(entrdte2/10000) .
VARIABLE LABELS entr2yr 'Enter2 year' .
EXECUTE .
COMPUTE entr2mo = TRUNC(entrdte2/100)-(100*entr2yr).
VARIABLE LABELS entr2mo 'enter2 month' .
EXECUTE .
COMPUTE entr2day = (entrdte2-(10000*entr2yr)-(100*entr2mo)).
VARIABLE LABELS entr2day 'entr2day' .
EXECUTE .
COMPUTE Datentr2 = DATE.MDY(entr2mo,entr2day,entr2yr) .
EXECUTE .
Compute entr3yr= TRUNC(entrdte3/10000) .
VARIABLE LABELS entr3yr 'Enter3 year' .
EXECUTE .

COMPUTE entr3mo = TRUNC(entrdte3/100)-(100*entr3yr).
VARIABLE LABELS entr2mo 'enter2 month' .
EXECUTE
```

```
COMPUTE entr3day = (entrdte3-(10000*entr3yr)-(100*entr3mo)).
VARIABLE LABELS entr3day 'entr3day' .
EXECUTE .
COMPUTE Datentr3 = DATE.MDY(entr3mo,entr3day,entr3yr) .
EXECUTE .
Compute leav1yr= TRUNC(leavdte1/10000) .
VARIABLE LABELS leav1yr 'leave1 year' .
EXECUTE .
COMPUTE leav1mo = TRUNC(leavdte1/100)-(100*leav1yr).
VARIABLE LABELS leav1mo 'leave1 month' .
EXECUTE .
COMPUTE leav1day = (leavdte1-(10000*leav1yr)-(100*leav1mo)).
VARIABLE LABELS leav1day 'leave1 day' .
EXECUTE .
COMPUTE Datleav1 = DATE.MDY(leav1mo,leav1day,leav1yr) .
EXECUTE .
Compute leav2yr= TRUNC(leavdte2/10000) .
VARIABLE LABELS leav2yr 'leave2 year' .
EXECUTE .
COMPUTE leav2mo = TRUNC(leavdte2/100)-(100*leav2yr).
VARIABLE LABELS leav2mo 'leave2 month' .
EXECUTE .
COMPUTE leav2day = (leavdte2-(10000*leav2yr)-(100*leav2mo)).
VARIABLE LABELS leav2day 'leave2 day' .
EXECUTE .
COMPUTE Datleav2 = DATE.MDY(leav2mo,leav2day,leav2yr) .
EXECUTE .
Compute leav3yr= TRUNC(leavdte3/10000) .
VARIABLE LABELS leav3yr 'leave3 year' .
EXECUTE .
COMPUTE leav3mo = TRUNC(leavdte3/100)-(100*leav3yr).
VARIABLE LABELS leav3mo 'leave3 month' .
EXECUTE .
COMPUTE leav3day = (leavdte3-(10000*leav3yr)-(100*leav3mo)).
VARIABLE LABELS leav3day 'leave3 day' .
EXECUTE .
COMPUTE Datleav3 = DATE.MDY(leav3mo,leav3day,leav3yr) .
EXECUTE .

*******Comments: English Language Proficiency Computation*******

Recode Language (90,33,11,37,39,13,81,41,43,15,83,45,47,49,51,53,55,9,57,
        17,59,61,19,5,21,7,35,23,77,79,25,63,65,27,67,1,29,69,
        73,71,31,3,75=1)(91,34,12,38,40,14,82,42,44,16,84,46,48,
        50,52,54,56,10,58,18,60,62,20,6,22,8,36,24,78,80,26,64,
        66,28,68,2,30,70,74,72,32,4,76=2) (0=3)into Profcncy.
Variable Labels Profcncy 'Language Proficiency'.
Value Labels Profcncy 1'LEP'
            2'FEP'
            3'English only'.
```

```
********Comments  School Level Computation********

Recode School ('A6','A7','A8','A9'=50)('S1','S2','S3','S4'=95)
('A1','A2','A3','A4'=51)('B1','B2','B3','B4'=52)('62','C4'=62)
('D1','D2','D3','D4'=54)('R1','R2','R3','R4'=94)('70'=70)('55'=55)
('I1','I2','I3','I4'=93)('O1','O2','O3','O4'=56)('F1','F2','F3','F4'=57)
('58'=58)('W1','W2','W3','W4'=92)('98','C6','C7','C8','C9'=98)
('G1','G2','G3','G4'=59)('H1','H2','H3','H4'=60)('J1','J2','J3','J4'=61)
('K1','K2','K3','K4'=63)('77'=77)('64'=64)('L1','L2','L3','L4'=65)
('66'=66)('P1','P2','P3','P4'=43)('75'=75)('M1','M2','M3','M4'=67)
('68'=68)('H6','H7','H8','H9'=69)('73'=73)('42'=42)
('B6','B7','B8','B9'=97)('Z1','Z2','Z3','Z4'=71)('N1','N2','N3','N4'=72)
('D6','D7','D8','D9'=83)('L6','L7','L8','L9'=80)('79'=79)
('85'=85)('S6','S7','S8','S9'=78)('E6','E7','E8','E9'=87)('84'=84)
('91'=91)('90'=90)('76'=76)('86'=86)('81'=81)('82'=82)
into schlnme.

Variable Labels schlnme 'Name of school for all cycles'.
Value Labels schlnme 50'Adams Elem'
                    95'Carver Elem'
                    51'Diamond Elem'
                    52'Edison Elem'
                    62'Franklin Elem'
                    54'Fremont Elem'
                    94'Garfield Elem'
                    70'Greenville Elem'
                    55'Harvey Elem'
                    93'Heninger Elem'
                    56'Hoover Elem'
                    57'Jackson Elem'
                    58'Jefferson Elem'
                    92'Kennedy Elem'
                    98'King Elem'
                    59'Lincoln Elem'
                    60'Lowell Elem'
                    61'Madison Elem'
                    63'Martin Elem'
                    77'Mitchell Elem'
                    64'Monroe Elem'
                    65'Monte Vista Elem'
                    66'Muir Elem'
                    43'Pio Pico Elem'
                    75'Remington Elem'
                    67'Roosevelt Elem'
                    68'Santiago Elem'
                    69'Sepulveda Elem'
                    73'Taft Elem'
                    42'Thorpe Elem'
                    97'Walker Elem'
                    71'Washington Elem'
                    72'Wilson Elem'
                    83'Carr Intermediate'
                    80'Lathorpe Intermediate'
                    79'MacArthur Intermediate'
```

```
85'Mcfadden Intermediate'
78'Sierra Intermediate'
87'Spurgeon Intermediate'
84'Willard Intermediate'
91'Cesar Chavez HS'
90'Century HS'
76'Mt View HS'
86'Saddleback HS'
81'Santa Ana HS'
82'Valley HS'.


Recode schlnme(50,95,51,52,62,54,94,70,55,93,56,57,
58,92,98,59,60,61,63,77,64,65,66,43,75,67,68,69,73,42,97,
71,72=1)(83,80,79,85,78,87,84=2)(91,90,76,86,81,82=3)
 into schltyp.

Variable Labels schltyp 'Type of School'.
Value Labels schltyp 1'Elementary'
                    2'Middle'
                    3'High School'.


*****************************Comments:Demographic Variables Recoding************************
AUTORECODE
  VARIABLES=lnchcde  /INTO frlunch
  /PRINT.
RECODE
  frlunch  (1=0)  (2=0)  (3=1)  (4=0)  (5=1)  (6=0)  .
variable labels
          frlunch "Poverty Status".
value labels
          frlunch  1 "Poverty"
                   0 "Non-Poverty".
EXECUTE .
RECODE
  ethnic
  (1=1) (4=2) (SYSMIS=SYSMIS) (ELSE=3) INTO  Eth_Rev .
VARIABLE LABELS Eth_Rev 'Revised Ethnic Code'.
VALUE LABELS Eth_rev
          1 "Hispanic"
          2 "Asian"
          3 "All Other".
RECODE
  school
  ('42'=0) ('55'=0) ('58'=0) ('62'=0) ('64'=0) ('66'=0) ('70'=0)
  ('73'=0) ('75'=0) ('76'=0) ('77'=0) ('79'=0) ('81'=0) ('82'=0)
  ('84'=0) ('85'=0) ('86'=0) ('90'=0) ('91'=0) ('98'=0) ('A1'=1)
  ('A2'=2) ('A3'=3) ('A4'=4) ('A6'=1) ('A7'=2) ('A8'=3) ('A9'=4)
  ('B1'=1) ('B2'=2) ('B6'=1) ('B3'=3) ('B4'=4) ('B7'=2) ('B8'=3)
  ('B9'=4) ('C4'=4) ('C6'=1) ('C7'=2) ('C8'=3) ('C9'=4) ('D1'=1)
  ('D2'=2) ('D3'=3) ('D4'=4) ('D6'=1) ('D7'=2) ('D8'=3) ('D9'=4)
  ('E6'=1) ('E7'=2) ('E8'=3) ('E9'=4) ('F1'=1) ('F2'=2) ('F3'=3)
  ('F4'=4) ('G1'=1) ('G2'=2) ('G3'=3) ('G4'=4) ('H1'=1) ('H2'=2)
```

```
('H3'=3) ('H4'=4) ('H6'=1) ('H7'=2) ('H8'=3) ('H9'=4) ('I1'=1)
('I2'=2) ('I3'=3) ('I4'=4) ('J1'=1) ('J2'=2) ('J3'=3) ('J4'=4)
('K1'=1) ('K2'=2) ('K3'=3) ('K4'=4) ('L1'=1) ('L2'=2) ('L3'=3)
('L4'=4) ('L6'=1) ('L7'=2) ('L8'=3) ('L9'=4) ('M1'=1) ('M2'=2)
('M3'=3) ('M4'=4) ('N1'=1) ('N2'=2) ('N3'=3) ('N4'=4) ('O1'=1)
('O2'=2) ('O3'=3) ('O4'=4) ('P1'=1) ('P2'=2) ('P3'=3) ('P4'=4)
('R1'=1) ('R2'=2) ('R3'=3) ('R4'=4) ('S1'=1) ('S2'=2) ('S3'=3)
('S4'=4) ('S6'=1) ('S7'=2) ('S8'=3) ('S9'=4) ('W1'=1) ('W2'=2)
('W3'=3) ('W4'=4) ('Z1'=1) ('Z2'=2) ('Z3'=3) ('Z4'=4) INTO Cycle.
VARIABLE LABELS Cycle 'Cycle (0=Trad, 1=A, 2=B...)'.
EXECUTE.
compute overage = (enddate - brthdte)/(60*60*24*365.24) - 5 - (10/12) - grade.
variable labels overage "Overage for grade (msng: <-1, >6)".
missing values overage lowest thru -1, 6 thru highest.
Compute DISTTIME = (enddate - datestrt)/(60*60*24*365.24)
EXECUTE.
RECODE
 zip
 (92701=1) (92702=2) (92703=3) (92704=4) (92705=5) (92706=6) (92707=7)
  (Lowest thru 92700=8) (92708 thru 926804826=8) (927010000 thru
 927019999=1) (927030000 thru 927039999=3) (927060000 thru 927069999=6)
 (927070000 thru 927079999=7) (927040000 thru 927049999=4) (ELSE=8) INTO
 zipcode.
VARIABLE LABELS zipcode 'Recoded Zips 92701-92707 + Othr'.
EXECUTE.
RECODE
 specled
 (Lowest thru 431=1) (ELSE=0) INTO SPED.
VARIABLE LABELS SPED 'Special Ed - Any Service'.
EXECUTE.
RECODE
 language
 (0=0) (MISSING=SYSMIS) (1 thru 2=1) (3 thru 4=2) (5 thru 6=3) (7 thru
 8=4) (9 thru 10=5) (ELSE=6) INTO langcode.
VARIABLE LABELS langcode 'Language group'.
value labels langcode
        0 "English Only"
        1 "Spanish"
        2 "Vietnamese"
        3 "Cambodian"
        4 "Lao"
        5 "Hmong"
        6 "Other Lang".
Value Labels Zipcode
        1 "92701"
        2 "92702"
        3 "92703"
        4 "92704"
        5 "92705"
        6 "92706"
        7 "92707"
        8 "All Others".
EXECUTE.
RECODE
```

```
 bprogcde
 (0 thru 1=1) (2 thru 4=2) (5 thru 6=3) INTO Progtype .
VARIABLE LABELS Progtype 'Type of Program'.
value labels progtype
        1 "Transitional"
        2 "Immersion"
        3 "Mainstream".
EXECUTE .
SAVE OUTFILE='d:\SantaAnaProject\SAUSDCompleteRev2.sav'
        /DROP datex12 datex22 datex41 datex51 datey02 datey22 datey72 datey92 datez02 datez22
datleav3 leavdte3 ltc9504 ltc9504g ltc9504s
        lts9402 lts9402g lts9402s lts9403 lts9403g lts9403s lts9410 lts9410s lts9410g lts9412 lts9412g
lts9412s lts9502 lts9502g lts9502s
lts9504 lts9504g lts9504s lts9511 lts9511g lts9511s lts9512 lts9512g lts9512s lts9602 lts9602g lts9602s
mtc9504 mtc9504g mtc9504s oa_err rtc9504
rtc9504g rtc9504s tbc9504 tbc9504g tbc9504s tbs9402 tbs9402g tbs9402s tbs9403 tbs9403g tbs9403s
tbs9410 tbs9410g tbs9410s tbs9412 tbs9412g
tbs9412s tbs9502 tbs9502g tbs9502s tbs9504 tbs9504g tbs9504s tbs9511 tbs9511g tbs9511s tbs9512
tbs9512g tbs9512s tbs9602 tbs9602g tbs9602s
tbs9704 tbs9704g tbs9704s
  /COMPRESSED.

**********Comments: Program Service Data Transposition**********

File Type Grouped
File='C:\Share\SAUSD data\SAUSD all students\progservicecdes.dat'
Record=#rec 7-9(A) case=stndid 1-6
Wild=nowarn
Missing=nowarn.
Record type 'X0 '.
Data List /X0 17-22.
Record type 'X01'.
Data List /X01 17-22.
Record Type 'X1 '.
Data List /X1 17-22.
Record Type 'X11'.
Data List /X11 17-22.
Record Type 'X12'.
Data List /X12 17-22.
Record Type 'X2 '.
Data List /X2 17-22.
Record Type 'X21'.
Data List /X21 17-22.
Record Type 'X22'.
Data List /X22 17-22.
Record Type 'X3 '.
Data List /X3 17-22.
Record Type 'X31'.
Data List /X31 17-22.
Record Type 'X4 '.
Data List /X4 17-22.
Record Type 'X41'.
Data List /X41 17-22.
Record Type 'X5 '.
```

Data List /X5 17-22.
Record Type 'X51'.
Data List /X51 17-22.
Record Type 'X6 '.
Data List /X6 17-22.
Record Type 'X7 '.
Data List /X7 17-22.
Record Type 'X8 '.
Data List /X8 17-22.
Record Type 'X9 '.
Data List /X9 17-22.
Record Type 'Y0 '.
Data List /Y0 17-22.
Record Type 'Y01'.
Data List /Y01 17-22.
Record Type 'Y02'.
Data List /Y02 17-22.
Record Type 'Y1 '.
Data List /Y1 17-22.
Record Type 'Y11'.
Data List /Y11 17-22.
Record Type 'Y2 '.
Data List /Y2 17-22.
Record Type 'Y21'.
Data List /Y21 17-22.
Record Type 'Y22'.
Data List /Y22 17-22.
Record Type 'Y3 '.
Data List /Y3 17-22.
Record Type 'Y31'.
Data List /Y31 17-22.
Record Type 'Y4 '.
Data List /Y4 17-22.
Record Type 'Y41'.
Data List /Y41 17-22.
Record Type 'Y5 '.
Data List /Y5 17-22.
Record Type 'Y51'.
Data List /Y51 17-22.
Record Type 'Y6 '.
Data List /Y6 17-22.
Record Type 'Y61'.
Data List /Y61 17-22.
Record Type 'Y7 '.
Data List /Y7 17-22.
Record Type 'Y71'.
Data List /Y71 17-22.
Record Type 'Y72'.
Data List /Y72 17-22.
Record Type 'Y8 '.
Data List /Y8 17-22.
Record Type 'Y81'.
Data List /Y81 17-22.
Record Type 'Y9 '.

```
Data List /Y9 17-22.
Record Type 'Y91'.
Data List /Y91 17-22.
Record Type 'Y92'.
Data List /Y92 17-22.
Record Type 'Z0 '.
Data List /Z0 17-22.
Record Type 'Z01'.
Data List /Z01 17-22.
Record Type 'Z02'.
Data List /Z02 17-22.
Record Type 'Z1 '.
Data List /Z1 17-22.
Record Type 'Z11'.
Data List /Z11 17-22.
Record Type 'Z2 '.
Data List /Z2 17-22.
Record Type 'Z21'.
Data List /Z21 17-22.
Record Type 'Z22'.
Data List /Z22 17-22.
Record Type 'Z3 '.
Data List /Z3 17-22.
Record Type 'Z31'.
Data List /Z31 17-22.
Record Type 'Z4 '.
Data List /Z4 17-22.
Record Type 'Z41'.
Data List /Z41 17-22.
Record Type 'Z5 '.
Data List /Z5 17-22.
Record Type 'Z51'.
Data List /Z51 17-22.
Record type other skip.
End File Type.
Execute.

**********Comments: Program Service Dates Computation**********

Compute x0yr=Trunc(x0/10000).
Compute x0mo=Trunc(x0/100)-(100*x0yr).
Compute x0day=(x0-(10000*x0yr)-(100*x0mo)).
COMPUTE Datex0 = DATE.MDY(x0mo,x0day,x0yr) .
EXECUTE .
Compute x01yr=Trunc(x01/10000).
Compute x01mo=Trunc(x01/100)-(100*x01yr).
Compute x01day=(x01-(10000*x01yr)-(100*x01mo)).
COMPUTE Datex01 = DATE.MDY(x01mo,x01day,x01yr) .
EXECUTE .
Compute x1yr=Trunc(x1/10000).
Compute x1mo=Trunc(x1/100)-(100*x1yr).
Compute x1day=(x1-(10000*x1yr)-(100*x1mo)).
COMPUTE Datex1 = DATE.MDY(x1mo,x1day,x1yr) .
EXECUTE .
```

```
Compute x11yr=Trunc(x11/10000).
Compute x11mo=Trunc(x11/100)-(100*x11yr).
Compute x11day=(x11-(10000*x11yr)-(100*x11mo)).
COMPUTE Datex11 = DATE.MDY(x11mo,x11day,x11yr) .
EXECUTE .
Compute x12yr=Trunc(x12/10000).
Compute x12mo=Trunc(x12/100)-(100*x12yr).
Compute x12day=(x12-(10000*x12yr)-(100*x12mo)).
COMPUTE Datex12 = DATE.MDY(x12mo,x12day,x12yr) .
EXECUTE .
Compute x2yr=Trunc(x2/10000).
Compute x2mo=Trunc(x2/100)-(100*x2yr).
Compute x2day=(x2-(10000*x2yr)-(100*x2mo)).
COMPUTE Datex2 = DATE.MDY(x2mo,x2day,x2yr) .
EXECUTE .
Compute x21yr=Trunc(x21/10000).
Compute x21mo=Trunc(x21/100)-(100*x21yr).
Compute x21day=(x21-(10000*x21yr)-(100*x21mo)).
COMPUTE Datex21 = DATE.MDY(x21mo,x21day,x21yr) .
EXECUTE .


Compute x22yr=Trunc(x22/10000).
Compute x22mo=Trunc(x22/100)-(100*x22yr).
Compute x22day=(x22-(10000*x22yr)-(100*x22mo)).
COMPUTE Datex22 = DATE.MDY(x22mo,x22day,x22yr) .
EXECUTE .
Compute x3yr=Trunc(x3/10000).
Compute x3mo=Trunc(x3/100)-(100*x3yr).
Compute x3day=(x3-(10000*x3yr)-(100*x3mo)).
COMPUTE Datex3 = DATE.MDY(x3mo,x3day,x3yr) .
EXECUTE .
Compute x31yr=Trunc(x31/10000).
Compute x31mo=Trunc(x31/100)-(100*x31yr).
Compute x31day=(x31-(10000*x31yr)-(100*x31mo)).
COMPUTE Datex31 = DATE.MDY(x31mo,x31day,x31yr) .
EXECUTE .


Compute x4yr=Trunc(x4/10000).
Compute x4mo=Trunc(x4/100)-(100*x4yr).
Compute x4day=(x4-(10000*x4yr)-(100*x4mo)).
COMPUTE Datex4 = DATE.MDY(x4mo,x4day,x4yr) .
EXECUTE .
Compute x41yr=Trunc(x41/10000).
Compute x41mo=Trunc(x41/100)-(100*x41yr).
Compute x41day=(x41-(10000*x41yr)-(100*x41mo)).
COMPUTE Datex41 = DATE.MDY(x41mo,x41day,x41yr) .
EXECUTE .
Compute x5yr=Trunc(x5/10000).
Compute x5mo=Trunc(x5/100)-(100*x5yr).
Compute x5day=(x5-(10000*x5yr)-(100*x5mo)).
COMPUTE Datex5 = DATE.MDY(x5mo,x5day,x5yr) .
EXECUTE .
```

```
Compute x51yr=Trunc(x51/10000).
Compute x51mo=Trunc(x51/100)-(100*x51yr).
Compute x51day=(x51-(10000*x51yr)-(100*x51mo)).
COMPUTE Datex51 = DATE.MDY(x51mo,x51day,x51yr) .
EXECUTE .
Compute x6yr=Trunc(x6/10000).
Compute x6mo=Trunc(x6/100)-(100*x6yr).
Compute x6day=(x6-(10000*x6yr)-(100*x6mo)).
COMPUTE Datex6 = DATE.MDY(x6mo,x6day,x6yr) .
EXECUTE .
Compute x7yr=Trunc(x7/10000).
Compute x7mo=Trunc(x7/100)-(100*x7yr).
Compute x7day=(x7-(10000*x7yr)-(100*x7mo)).
COMPUTE Datex7 = DATE.MDY(x7mo,x7day,x7yr) .
EXECUTE .
Compute x8yr=Trunc(x8/10000).
Compute x8mo=Trunc(x8/100)-(100*x8yr).
Compute x8day=(x8-(10000*x8yr)-(100*x8mo)).
COMPUTE Datex8 = DATE.MDY(x8mo,x8day,x8yr) .
EXECUTE .

Compute x9yr=Trunc(x9/10000).
Compute x9mo=Trunc(x9/100)-(100*x9yr).
Compute x9day=(x9-(10000*x9yr)-(100*x9mo)).
COMPUTE Datex9 = DATE.MDY(x9mo,x9day,x9yr) .
EXECUTE .
Compute y0yr=Trunc(y0/10000).
Compute y0mo=Trunc(y0/100)-(100*y0yr).
Compute y0day=(y0-(10000*y0yr)-(100*y0mo)).
COMPUTE Datey0 = DATE.MDY(y0mo,y0day,y0yr) .
EXECUTE .
Compute y01yr=Trunc(y01/10000).
Compute y01mo=Trunc(y01/100)-(100*y01yr).
Compute y01day=(y01-(10000*y01yr)-(100*y01mo)).
COMPUTE Datey01 = DATE.MDY(y01mo,y01day,y01yr) .
EXECUTE .
Compute y02yr=Trunc(y02/10000).
Compute y02mo=Trunc(y02/100)-(100*y02yr).
Compute y02day=(y02-(10000*y02yr)-(100*y02mo)).
COMPUTE Datey02 = DATE.MDY(y02mo,y02day,y02yr) .
EXECUTE .
Compute y1yr=Trunc(y1/10000).
Compute y1mo=Trunc(y1/100)-(100*y1yr).
Compute y1day=(y1-(10000*y1yr)-(100*y1mo)).
COMPUTE Datey1 = DATE.MDY(y1mo,y1day,y1yr) .
EXECUTE .
Compute y11yr=Trunc(y11/10000).
Compute y11mo=Trunc(y11/100)-(100*y11yr).
Compute y11day=(y11-(10000*y11yr)-(100*y11mo)).
COMPUTE Datey11 = DATE.MDY(y11mo,y11day,y11yr) .
EXECUTE .
Compute y2yr=Trunc(y2/10000).
Compute y2mo=Trunc(y2/100)-(100*y2yr).
```

```
Compute y2day=(y2-(10000*y2yr)-(100*y2mo)).
COMPUTE Datey2 = DATE.MDY(y2mo,y2day,y2yr) .
EXECUTE .
Compute y21yr=Trunc(y21/10000).
Compute y21mo=Trunc(y21/100)-(100*y21yr).
Compute y21day=(y21-(10000*y21yr)-(100*y21mo)).
COMPUTE Datey21 = DATE.MDY(y21mo,y21day,y21yr) .
EXECUTE .
Compute y22yr=Trunc(y22/10000).
Compute y22mo=Trunc(y22/100)-(100*y22yr).
Compute y22day=(y22-(10000*y22yr)-(100*y22mo)).
COMPUTE Datey22 = DATE.MDY(y22mo,y22day,y22yr) .
EXECUTE .
Compute y3yr=Trunc(y3/10000).
Compute y3mo=Trunc(y3/100)-(100*y3yr).
Compute y3day=(y3-(10000*y3yr)-(100*y3mo)).
COMPUTE Datey3 = DATE.MDY(y3mo,y3day,y3yr) .
EXECUTE .


Compute y31yr=Trunc(y31/10000).
Compute y31mo=Trunc(y31/100)-(100*y31yr).
Compute y31day=(y31-(10000*y31yr)-(100*y31mo)).
COMPUTE Datey31 = DATE.MDY(y31mo,y31day,y31yr) .
EXECUTE .
Compute y4yr=Trunc(y4/10000).
Compute y4mo=Trunc(y4/100)-(100*y4yr).
Compute y4day=(y4-(10000*y4yr)-(100*y4mo)).
COMPUTE Datey4 = DATE.MDY(y4mo,y4day,y4yr) .
EXECUTE .
Compute y41yr=Trunc(y41/10000).
Compute y41mo=Trunc(y41/100)-(100*y41yr).
Compute y41day=(y41-(10000*y41yr)-(100*y41mo)).
COMPUTE Datey41 = DATE.MDY(y41mo,y41day,y41yr) .
EXECUTE .
Compute y5yr=Trunc(y5/10000).
Compute y5mo=Trunc(y5/100)-(100*y5yr).
Compute y5day=(y5-(10000*y5yr)-(100*y5mo)).
COMPUTE Datey5 = DATE.MDY(y5mo,y5day,y5yr) .
EXECUTE .
Compute y51yr=Trunc(y51/10000).
Compute y51mo=Trunc(y51/100)-(100*y51yr).
Compute y51day=(y51-(10000*y51yr)-(100*y51mo)).
COMPUTE Datey51 = DATE.MDY(y51mo,y51day,y51yr) .
EXECUTE .
Compute y6yr=Trunc(y6/10000).
Compute y6mo=Trunc(y6/100)-(100*y6yr).
Compute y6day=(y6-(10000*y6yr)-(100*y6mo)).
COMPUTE Datey6 = DATE.MDY(y6mo,y6day,y6yr) .
EXECUTE .
Compute y61yr=Trunc(y61/10000).
Compute y61mo=Trunc(y61/100)-(100*y61yr).
```

```
Compute y61day=(y61-(10000*y61yr)-(100*y61mo)).
COMPUTE Datey61 = DATE.MDY(y61mo,y61day,y61yr) .
EXECUTE .
Compute y7yr=Trunc(y7/10000).
Compute y7mo=Trunc(y7/100)-(100*y7yr).
Compute y7day=(y7-(10000*y7yr)-(100*y7mo)).
COMPUTE Datey7 = DATE.MDY(y7mo,y7day,y7yr) .
EXECUTE .
Compute y71yr=Trunc(y71/10000).
Compute y71mo=Trunc(y71/100)-(100*y71yr).
Compute y71day=(y71-(10000*y71yr)-(100*y71mo)).
COMPUTE Datey71 = DATE.MDY(y71mo,y71day,y71yr) .
EXECUTE .
Compute y72yr=Trunc(y72/10000).
Compute y72mo=Trunc(y72/100)-(100*y72yr).
Compute y72day=(y72-(10000*y72yr)-(100*y72mo)).
COMPUTE Datey72 = DATE.MDY(y72mo,y72day,y72yr) .
EXECUTE .

Compute y8yr=Trunc(y8/10000).
Compute y8mo=Trunc(y8/100)-(100*y8yr).
Compute y8day=(y8-(10000*y8yr)-(100*y8mo)).
COMPUTE Datey8 = DATE.MDY(y8mo,y8day,y8yr) .
EXECUTE .
Compute y81yr=Trunc(y81/10000).
Compute y81mo=Trunc(y81/100)-(100*y81yr).
Compute y81day=(y81-(10000*y81yr)-(100*y81mo)).
COMPUTE Datey81 = DATE.MDY(y81mo,y81day,y81yr) .
EXECUTE .
Compute y9yr=Trunc(y9/10000).
Compute y9mo=Trunc(y9/100)-(100*y9yr).
Compute y9day=(y9-(10000*y9yr)-(100*y9mo)).
COMPUTE Datey9 = DATE.MDY(y9mo,y9day,y9yr) .
EXECUTE .
Compute y91yr=Trunc(y91/10000).
Compute y91mo=Trunc(y91/100)-(100*y91yr).
Compute y91day=(y91-(10000*y91yr)-(100*y91mo)).
COMPUTE Datey91 = DATE.MDY(y91mo,y91day,y91yr) .
EXECUTE .
Compute y92yr=Trunc(y92/10000).
Compute y92mo=Trunc(y92/100)-(100*y92yr).
Compute y92day=(y92-(10000*y92yr)-(100*y92mo)).
COMPUTE Datey92 = DATE.MDY(y92mo,y92day,y92yr) .
EXECUTE .
Compute z0yr=Trunc(z0/10000).
Compute z0mo=Trunc(z0/100)-(100*z0yr).
Compute z0day=(z0-(10000*z0yr)-(100*z0mo)).
COMPUTE Datez0 = DATE.MDY(z0mo,z0day,z0yr) .
EXECUTE .
Compute z01yr=Trunc(z01/10000).
Compute z01mo=Trunc(z01/100)-(100*z01yr).
```

```
Compute z01day=(z01-(10000*z01yr)-(100*z01mo)).
COMPUTE Datez01 = DATE.MDY(z01mo,z01day,z01yr) .
EXECUTE
Compute z02yr=Trunc(z02/10000).
Compute z02mo=Trunc(z02/100)-(100*z02yr).
Compute z02day=(z02-(10000*z02yr)-(100*z02mo)).
COMPUTE Datez02 = DATE.MDY(z02mo,z02day,z02yr) .
EXECUTE .
Compute z1yr=Trunc(z1/10000).
Compute z1mo=Trunc(z1/100)-(100*z1yr).
Compute z1day=(z1-(10000*z1yr)-(100*z1mo)).
COMPUTE Datez1 = DATE.MDY(z1mo,z1day,z1yr) .
EXECUTE .
Compute z11yr=Trunc(z11/10000).
Compute z11mo=Trunc(z11/100)-(100*z11yr).
Compute z11day=(z11-(10000*z11yr)-(100*z11mo)).
COMPUTE Datez11 = DATE.MDY(z11mo,z11day,z11yr) .
EXECUTE .

Compute z2yr=Trunc(z2/10000).
Compute z2mo=Trunc(z2/100)-(100*z2yr).
Compute z2day=(z2-(10000*z2yr)-(100*z2mo)).
COMPUTE Datez2 = DATE.MDY(z2mo,z2day,z2yr) .
EXECUTE .
Compute z21yr=Trunc(z21/10000).
Compute z21mo=Trunc(z21/100)-(100*z21yr).
Compute z21day=(z21-(10000*z21yr)-(100*z21mo)).
COMPUTE Datez21 = DATE.MDY(z21mo,z21day,z21yr) .
EXECUTE .
Compute z22yr=Trunc(z22/10000).
Compute z22mo=Trunc(z22/100)-(100*z22yr).
Compute z22day=(z22-(10000*z22yr)-(100*z22mo)).
COMPUTE Datez22 = DATE.MDY(z22mo,z22day,z22yr) .
EXECUTE .
Compute z3yr=Trunc(z3/10000).
Compute z3mo=Trunc(z3/100)-(100*z3yr).
Compute z3day=(z3-(10000*z3yr)-(100*z3mo)).
COMPUTE Datez3 = DATE.MDY(z3mo,z3day,z3yr) .
EXECUTE .
Compute z31yr=Trunc(z31/10000).
Compute z31mo=Trunc(z31/100)-(100*z31yr).
Compute z31day=(z31-(10000*z31yr)-(100*z31mo)).
COMPUTE Datez31 = DATE.MDY(z31mo,z31day,z31yr) .
EXECUTE .
Compute z4yr=Trunc(z4/10000).
Compute z4mo=Trunc(z4/100)-(100*z4yr).
Compute z4day=(z4-(10000*z4yr)-(100*z4mo)).
COMPUTE Datez4 = DATE.MDY(z4mo,z4day,z4yr) .
EXECUTE .
Compute z41yr=Trunc(z41/10000).
Compute z41mo=Trunc(z41/100)-(100*z41yr).
```

```
Compute z41day=(z41-(10000*z41yr)-(100*z41mo)).
COMPUTE Datez41 = DATE.MDY(z41mo,z41day,z41yr) .
EXECUTE .
Compute z5yr=Trunc(z5/10000).
Compute z5mo=Trunc(z5/100)-(100*z5yr).
Compute z5day=(z5-(10000*z5yr)-(100*z5mo)).
COMPUTE Datez5 = DATE.MDY(z5mo,z5day,z5yr) .
EXECUTE .
Compute z51yr=Trunc(z51/10000).
Compute z51mo=Trunc(z51/100)-(100*z51yr).
Compute z51day=(z51-(10000*z51yr)-(100*z51mo)).
COMPUTE Datez51 = DATE.MDY(z51mo,z51day,z51yr) .
EXECUTE .


**********Commments: Program Service Recoding**********

RECODE
 progcde
 ('Y0'=1) ('Y1'=2) ('Z5'=3) ('Y2'=4) ('X0'=5) ('X1'=6) ('X2'=7)
 ('X3'=8) ('X4'=9) ('X5'=10) ('X6'=11) ('X7'=12) ('X8'=13) ('X9'=14)
 ('Y3'=15) ('Y4'=16) ('Y5'=17) ('Y6'=18) ('Y7'=19) ('Y8'=20) ('Y9'=21)
  ('Z0'=22) ('Z1'=23) ('Z2'=24) ('Z3'=25) ('Z4'=26)
 INTO Prognw .
EXECUTE .


USE ALL.
COMPUTE filter_$=(dummy1=stid and prognw=dprog).
VARIABLE LABEL filter_$ 'dummy1=stid and prognw=dprog (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .

USE ALL.
COMPUTE filter_$=(stid=dummy1 and prognw=dprog and strtprog=dendprog).
VARIABLE LABEL filter_$ 'stid=dummy1 and prognw=dprog and strtprog=dendprog'+
' (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .


DO IF (stid=dstid and prognw=dprognw) .
RECODE
 progcde ('Y0'='Y01') ('Y1'='Y11') ('Z5'='Z51') ('Y2'='Y21')
 ('X0'='X01') ('X1'='X11') ('X2'='X21') ('X3'='X31') ('X4'='X41')
 ('X5'='X51') ('X6'='X61') ('X7'='X71') ('X8'='X81') ('X9'='X91')
 ('Y3'='Y31') ('Y4'='Y41') ('Y5'='Y51') ('Y6'='Y61') ('Y7'='Y71')
 ('Y8'='Y81') ('Y9'='Y91') ('Z0'='Z01') ('Z1'='Z11') ('Z2'='Z21')
 ('Z3'='Z31') ('Z4'='Z41') .
END IF
```

```
EXECUTE

DO IF (stid=dstid and prognw=dprognw).
RECODE
 prognw (1=100) (2=200) (3=30) (4=40)
 (5=50) (6=60) (7=70) (8=80) (9=90)
 (10=1000) (11=110) (12=120) (13=130) (14=140)
 (15=150) (16=160) (17=170) (18=180) (19=190)
 (20=2000) (21=210) (22=220) (23=230) (24=240)
 (25=250) (26=260) .
END IF.
EXECUTE.
**********Comments: Computations of Redesignation Dates**********

Compute f1syr=Trunc(f1s/10000).
Compute f1smo=Trunc(f1s/100)-(100*f1syr).
Compute f1sday=(f1s-(10000*f1syr)-(100*f1smo)).
COMPUTE Datef1s = DATE.MDY(f1smo,f1sday,f1syr).
EXECUTE.

Compute f2syr=Trunc(f2s/10000).
Compute f2smo=Trunc(f2s/100)-(100*f2syr).
Compute f2sday=(f2s-(10000*f2syr)-(100*f2smo)).
COMPUTE Datef2s = DATE.MDY(f2smo,f2sday,f2syr).
EXECUTE.

Compute f3syr=Trunc(f3s/10000).
Compute f3smo=Trunc(f3s/100)-(100*f3syr).
Compute f3sday=(f3s-(10000*f3syr)-(100*f3smo)).
COMPUTE Datef3s = DATE.MDY(f3smo,f3sday,f3syr).
EXECUTE.


Compute f4syr=Trunc(f4s/10000).
Compute f4smo=Trunc(f4s/100)-(100*f4syr).
Compute f4sday=(f4s-(10000*f4syr)-(100*f4smo)).
COMPUTE Datef4s = DATE.MDY(f4smo,f4sday,f4syr).
EXECUTE.

Compute f5syr=Trunc(f5s/10000).
Compute f5smo=Trunc(f5s/100)-(100*f5syr).
Compute f5sday=(f5s-(10000*f5syr)-(100*f5smo)).
COMPUTE Datef5s = DATE.MDY(f5smo,f5sday,f5syr).
EXECUTE.

**********Comments: Bilingual Program Data Transposition**********
File Type Grouped
File='C:\Share\SAUSD data\SAUSD all students\progstrtv0-v6sorted.dat'
Record=#rec 7-9(A) case=stndid 1-6
Wild=nowarn
Missing=nowarn.
Record Type 'V0 '.
Data List /V0 14-19.
Record Type 'V01'.
```

```
Data List /V01 14-19.
Record Type 'V1 '.
Data List /V1 14-19.
Record Type 'V11'.
Data List /V11 14-19.
Record Type 'V12'.
Data List /V12 14-19.
Record Type 'V2 '.
Data List /V2 14-19.
Record Type 'V21'.
Data List /V21 14-19.
Record Type 'V3 '.
Data List /V3 14-19.
Record Type 'V31'.
Data List /V31 14-19.
Record Type 'V4 '.
Data List /V4 14-19.
Record Type 'V41'.
Data List /V41 14-19.
Record Type 'V5'.
Data List /V5 14-19.
Record Type 'V51'.
Data List /V51 14-19.
Record Type 'V6 '.
Data List /V6 14-19.
Record Type 'V61'.
Data List /V61 14-19.
Record Type 'V62'.
Data List /V62 14-19.
Record type other skip.
End File Type.
Execute.

**********Comment: Bilingual Program Dates Calculation**********

Compute v0syr=Trunc(v0s/10000).
Compute v0smo=Trunc(v0s/100)-(100*v0syr).
Compute v0sday=(v0s-(10000*v0syr)-(100*v0smo)).
COMPUTE Datev0s = DATE.MDY(v0smo,v0sday,v0syr) .
EXECUTE .
Compute v01syr=Trunc(v01s/10000).
Compute v01smo=Trunc(v01s/100)-(100*v01syr).
Compute v01sday=(v01s-(10000*v01syr)-(100*v01smo)).
COMPUTE Datev01s = DATE.MDY(v01smo,v01sday,v01syr) .
EXECUTE .
Compute v1syr=Trunc(v1s/10000).
Compute v1smo=Trunc(v1s/100)-(100*v1syr).
Compute v1sday=(v1s-(10000*v1syr)-(100*v1smo)).
COMPUTE Datev1s = DATE.MDY(v1smo,v1sday,v1syr) .
EXECUTE .
Compute v11syr=Trunc(v11s/10000).
Compute v11smo=Trunc(v11s/100)-(100*v11syr).
Compute v11sday=(v11s-(10000*v11syr)-(100*v11smo)).
COMPUTE Datev11s = DATE.MDY(v11smo,v11sday,v11syr) .
```

```
EXECUTE
Compute v2syr=Trunc(v2s/10000).
Compute v2smo=Trunc(v2s/100)-(100*v2syr).
Compute v2sday=(v2s-(10000*v2syr)-(100*v2smo)).
COMPUTE Datev2s = DATE.MDY(v2smo,v2sday,v2syr) .
EXECUTE .
Compute v21syr=Trunc(v21s/10000).
Compute v21smo=Trunc(v21s/100)-(100*v21syr).
Compute v21sday=(v21s-(10000*v21syr)-(100*v21smo)).
COMPUTE Datev21s = DATE.MDY(v21smo,v21sday,v21syr) .
EXECUTE .
Compute v3syr=Trunc(v3s/10000).
Compute v3smo=Trunc(v3s/100)-(100*v3syr).
Compute v3sday=(v3s-(10000*v3syr)-(100*v3smo)).
COMPUTE Datev3s = DATE.MDY(v3smo,v3sday,v3syr) .
EXECUTE .
Compute v31syr=Trunc(v31s/10000).
Compute v31smo=Trunc(v31s/100)-(100*v31syr).
Compute v31sday=(v31s-(10000*v31syr)-(100*v31smo)).
COMPUTE Datev31s = DATE.MDY(v31smo,v31sday,v31syr) .
EXECUTE .
Compute v4syr=Trunc(v4s/10000).
Compute v4smo=Trunc(v4s/100)-(100*v4syr).
Compute v4sday=(v4s-(10000*v4syr)-(100*v4smo)).
COMPUTE Datev4s = DATE.MDY(v4smo,v4sday,v4syr) .
EXECUTE .
Compute v41syr=Trunc(v41s/10000).
Compute v41smo=Trunc(v41s/100)-(100*v41syr).
Compute v41sday=(v41s-(10000*v41syr)-(100*v41smo)).
COMPUTE Datev41s = DATE.MDY(v41smo,v41sday,v41syr) .
EXECUTE .
Compute v5syr=Trunc(v5s/10000).
Compute v5smo=Trunc(v5s/100)-(100*v5syr).
Compute v5sday=(v5s-(10000*v5syr)-(100*v5smo)).
COMPUTE Datev5s = DATE.MDY(v5smo,v5sday,v5syr) .
EXECUTE .
Compute v51syr=Trunc(v51s/10000).
Compute v51smo=Trunc(v51s/100)-(100*v51syr).
Compute v51sday=(v51s-(10000*v51syr)-(100*v51smo)).
COMPUTE Datev51s = DATE.MDY(v51smo,v51sday,v51syr) .
EXECUTE .



Compute v6syr=Trunc(v6s/10000).
Compute v6smo=Trunc(v6s/100)-(100*v6syr).
Compute v6sday=(v6s-(10000*v6syr)-(100*v6smo)).
COMPUTE Datev6s = DATE.MDY(v6smo,v6sday,v6syr) .
EXECUTE .
Compute v61syr=Trunc(v61s/10000).
Compute v61smo=Trunc(v61s/100)-(100*v61syr).
Compute v61sday=(v61s-(10000*v61syr)-(100*v61smo)).
COMPUTE Datev61s = DATE.MDY(v61smo,v61sday,v61syr) .
```

```
EXECUTE
Compute v62syr=Trunc(v62s/10000).
Compute v62smo=Trunc(v62s/100)-(100*v62syr).
Compute v62sday=(v62s-(10000*v62syr)-(100*v62smo)).
COMPUTE Datev62s = DATE.MDY(v62smo,v62sday,v62syr) .
EXECUTE .

**********Comments:Computations of Current Bilingual Program Assignment**********

COMPUTE MaxV = MAX(v0s,v01s,v1s,v11s,v2s,v21s,v3s,v31s,v4s,v41s,v5s,
v51s,v6s,v61s,v62s) .
EXECUTE .
DO IF (maxv = v0s or maxv = v01s) .
RECODE
 bprogcde (SYSMIS=0) .
END IF .
EXECUTE .
DO IF (maxv = v1s or maxv = v11s) .
RECODE
 bprogcde (SYSMIS=1) .
END IF .
EXECUTE .
DO IF (maxv = v2s or maxv = v21s) .
RECODE
 bprogcde (SYSMIS=2) .
END IF .
EXECUTE .
DO IF (maxv = v3s or maxv = v31s) .
RECODE
 bprogcde (SYSMIS=3) .
END IF .
EXECUTE .
DO IF (maxv = v4s or maxv = v41s) .
RECODE
 bprogcde (SYSMIS=4) .
END IF .
EXECUTE .
DO IF (maxv = v5s or maxv = v51s) .
RECODE
 bprogcde (SYSMIS=5) .
END IF .
EXECUTE .



DO IF (maxv = v6s or maxv = v61s or maxv=v62s) .
RECODE
 bprogcde (SYSMIS=6) .
END IF .
EXECUTE .

**********Comments: Computation of Earliest Bilingual Program Assignment

COMPUTE MinV = Min(v0s,v01s,v1s,v11s,v2s,v21s,v3s,v31s,v4s,v41s,v5s,
```

```
v51s,v6s,v61s,v62s).
EXECUTE.
DO IF (minv = v0s or minv = v01s).
RECODE
  minbprog (SYSMIS=0).
END IF.
EXECUTE.
DO IF (minv = v1s or minv = v11s).
RECODE
  minbprog (SYSMIS=1).
END IF.
EXECUTE.
DO IF (minv = v2s or minv = v21s).
RECODE
  minbprog (SYSMIS=2).
END IF.
EXECUTE.
DO IF (minv = v3s or minv = v31s).
RECODE
  minbprog (SYSMIS=3).
END IF.
EXECUTE.
DO IF (minv = v4s or minv = v41s).
RECODE
  minbprog (SYSMIS=4).
END IF.
EXECUTE.
DO IF (minv = v5s or minv = v51s).
RECODE
  minbprog (SYSMIS=5).
END IF.
EXECUTE.
DO IF (minv = v6s or minv = v61s or minv=v62s).
RECODE
  minbprog (SYSMIS=6).
END IF.
EXECUTE.

**********Comment: Program Enrollment Sequence**********
Vector #v(15).
Vector Order(15).
compute #v(1) = v0s.
 if (v0s > 0) order(1) = 1.
compute #v(2) = v01s.
 if (v01s > 0) order(2) = 2.
compute #v(3) = v1s.
 if (v1s > 0) order(3) = 3.
compute #v(4) = v11s.
 if (v11s > 0) order(4) = 4.
compute #v(5) = v2s.
 if (v2s > 0) order(5) = 5.
compute #v(6) = v21s.
 if (v21s > 0) order(6) = 6.
compute #v(7) = v3s.
```

```
 if (v3s > 0) order(7) = 7.
compute #v(8) = v31s.
 if (v31s > 0) order(8) = 8.
compute #v(9) = v4s.
 if (v4s > 0) order(9) = 9.
compute #v(10) = v41s.
 if (v41s > 0) order(10) = 10.
compute #v(11) = v5s.
 if (v5s > 0) order(11) = 11.
compute #v(12) = v51s.
 if (v51s > 0) order(12) = 12.
compute #v(13) = v6s.
 if (v6s > 0) order(13) = 13.
compute #v(14) = v61s.
 if (v61s > 0) order(14) = 14.
compute #v(15) = v62s.
 if (v62s > 0) order(15) = 15.
loop #I = 1 to 15.
loop #j = 15 to #I by -1.
 if (missing(#v(#i))) #v(#i) = 9999999.
 do if #v(#j) < #v(#i) .
  compute #hold = #v(#j).
  compute #v(#j) = #v(#i).
  compute #v(#i) = #hold.
  compute #hold = order(#J).
  compute order(#j) = order(#i).
  compute order(#i) = #hold.
 end if.
end loop.
end loop.
execute.


************Comment: Time in Program ****************************************

Vector #v(15).
vector #td(11).
vector p_time(11).
compute #v(1) = datev0s.
compute #v(2) = datev01s.
compute #v(3) = datev1s.
compute #v(4) = datev11s.
compute #v(5) = datev2s.
compute #v(6) = datev21s.
compute #v(7) = datev3s.
compute #v(8) = datev31s.
compute #v(9) = datev4s.
compute #v(10) = datev41s.
compute #v(11) = datev5s.
compute #v(12) = datev51s.
compute #v(13) = datev6s.
compute #v(14) = datev61s.
compute #v(15) = datev62s.
compute #td(1) = tst9402.
```

```
compute #td(2) = tst9403.
compute #td(3) = tst9410.
compute #td(4) = tst9412.
compute #td(5) = tst9502.
compute #td(6) = tst9504.
compute #td(7) = tst9511.
compute #td(8) = tst9512.
compute #td(9) = tst9602.
compute #td(10) = tst9604.
compute #td(11) = tst9704.
loop #I = 1 to 11.
loop #j = 5 to 1 by -1.
 if (#j = 5) #k = order5.
 if (#j = 4) #k = order4.
 if (#j = 3) #k = order3.
 if (#j = 2) #k = order2.
 if (#j = 1) #k = order1.
 do if missing(p_time(#i)) and #k > 0.
  if (#v(#k) < #td(#i))  p_time(#i) = (#td(#i) - #v(#k))/(60*60*24*30).
 end if.
end loop.
end loop.
execute.

**********Comments: Bilingual Date Calculations**********
COMPUTE datev0s = DATE.DMY((v0s-(100*trunc(v0s/100))),(TRUNC(v0s/100)-
(100*trunc(v0s/10000))),TRUNC(v0s/10000)) .
COMPUTE datev01s = DATE.DMY((v01s-(100*trunc(v01s/100))),(TRUNC(v01s/100)-
(100*trunc(v01s/10000))),TRUNC(v01s/10000)) .
COMPUTE datev1s = DATE.DMY((v1s-(100*trunc(v1s/100))),(TRUNC(v1s/100)-
(100*trunc(v1s/10000))),TRUNC(v1s/10000)) .
COMPUTE datev11s = DATE.DMY((v11s-(100*trunc(v11s/100))),(TRUNC(v11s/100)-
(100*trunc(v11s/10000))),TRUNC(v11s/10000)) .
COMPUTE datev2s = DATE.DMY((v2s-(100*trunc(v2s/100))),(TRUNC(v2s/100)-
(100*trunc(v2s/10000))),TRUNC(v2s/10000)) .
COMPUTE datev21s = DATE.DMY((v21s-(100*trunc(v21s/100))),(TRUNC(v21s/100)-
(100*trunc(v21s/10000))),TRUNC(v21s/10000)) .
COMPUTE datev3s = DATE.DMY((v3s-(100*trunc(v3s/100))),(TRUNC(v3s/100)-
(100*trunc(v3s/10000))),TRUNC(v3s/10000)) .
COMPUTE datev31s = DATE.DMY((v31s-(100*trunc(v31s/100))),(TRUNC(v31s/100)-
(100*trunc(v31s/10000))),TRUNC(v31s/10000)) .
COMPUTE datev4s = DATE.DMY((v4s-(100*trunc(v4s/100))),(TRUNC(v4s/100)-
(100*trunc(v4s/10000))),TRUNC(v4s/10000)) .
COMPUTE datev41s = DATE.DMY((v41s-(100*trunc(v41s/100))),(TRUNC(v41s/100)-
(100*trunc(v41s/10000))),TRUNC(v41s/10000)) .
COMPUTE datev5s = DATE.DMY((v5s-(100*trunc(v5s/100))),(TRUNC(v5s/100)-
(100*trunc(v5s/10000))),TRUNC(v5s/10000)) .
COMPUTE datev51s = DATE.DMY((v51s-(100*trunc(v51s/100))),(TRUNC(v51s/100)-
(100*trunc(v51s/10000))),TRUNC(v51s/10000)) .
COMPUTE datev6s = DATE.DMY((v6s-(100*trunc(v6s/100))),(TRUNC(v6s/100)-
(100*trunc(v6s/10000))),TRUNC(v6s/10000)) .
COMPUTE datev61s = DATE.DMY((v61s-(100*trunc(v61s/100))),(TRUNC(v61s/100)-
(100*trunc(v61s/10000))),TRUNC(v61s/10000)) .
```

```
COMPUTE datev62s = DATE.DMY((v62s-(100*trunc(v62s/100))),(TRUNC(v62s/100)-
(100*trunc(v62s/10000))),TRUNC(v62s/10000))
EXECUTE .

**************Comment: ELD and PLD Data Transpostion**********************************

File Type Grouped
File='C:\Share\SAUSD data\SAUSD all students\progstrtw0-w9sorted.dat'
Record=#rec 7-9(A) case=stndid 1-6
Wild=nowarn
Missing=nowarn.
Record Type 'W0 '.
Data List /W0 14-19.
Record Type 'W01'.
Data List /W01 14-19.
Record Type 'W02'.
Data List /W02 14-19.
Record Type 'W1 '.
Data List /W1 14-19.
Record Type 'W11'.
Data List /W11 14-19.
Record Type 'W12'.
Data List /W12 14-19.
Record Type 'W2 '.
Data List /W2 14-19.
Record Type 'W21'.
Data List /W21 14-19.
Record Type 'W22'.
Data List /W22 14-19.
Record Type 'W3 '.
Data List /W3 14-19.
Record Type 'W31'.
Data List /W31 14-19.
Record Type 'W32'.
Data List /W32 14-19.
Record Type 'W4 '.
Data List /W4 14-19.
Record Type 'W41'.
Data List /W41 14-19.
Record Type 'W42'.
Data List /W42 14-19.
Record Type 'W43'.
Data List /W43 14-19.
Record Type 'W5 '.
Data List /W5 14-19.
Record Type 'W51'.
Data List /W51 14-19.
Record Type 'W52'.
Data List /W52 14-19.
Record Type 'W6 '.
Data List /W6 14-19.
Record Type 'W61'.
Data List /W61 14-19.
Record Type 'W62'.
```

```
Data List /W62 14-19.
Record Type 'W7 '.
Data List /W7 14-19.
Record Type 'W71'.
Data List /W71 14-19.
Record Type 'W72'.
Data List /W72 14-19.
Record Type 'W8 '.
Data List /W8 14-19.
Record Type 'W81'.
Data List /W81 14-19.
Record Type 'W82'.
Data List /W82 14-19.
Record Type 'W9 '.
Data List /W9 14-19.
Record Type 'W91'.
Data List /W91 14-19.
Record Type 'W92'.
Data List /W92 14-19.
Record type other skip.
End File Type.
Execute.

**********Comment: Recoding w0-w5 dates in ascending order*********

Compute Max0=Max (w0s,w01s).
Compute Max1=Max (w1s,w11s,w12s).
Compute Max2=Max (w2s,w21s,w22s).
Compute Max3=Max (w3s,w31s,w32s).
Compute Max4=Max (w4s,w41s,w42s,w43s).


IF (w0s gt 1) w0snw = MIN(w0s,w01s,w1s,w11s,w12s,w2s,w21s,w22s,w3s,w31s,w32s,w4s,
w41s,w42s,w43s) .
EXECUTE .

Do If (w1s > 1).
Do If (sysmis (w0snw)).
Compute w1snw=Min(w1s,w11s,w12s,w2s,w21s,w22s,w3s,w31s,w32s,w4s,w41s,w42s,w43s).
Else IF (w1s gt w0snw).
Compute w1snw=w1s.
Else IF (w1s LE w0snw and w11s gt w0snw).
Compute w1snw=w11s.
End if.
End if.

Compute Max01nw=Max(w0snw,w1snw).

Do If (w2s > 1).
Do If (sysmis (w0snw) and sysmis (w1snw)).
Compute w2snw=Min(w2s,w21s,w22s,w3s,w31s,w32s,w4s,w41s,w42s,w43s).
Else IF (w2s gt Max01nw).
Compute w2snw=w2s.
Else IF (w2s LE Max01nw and w21S gt Max01nw).
```

```
Compute w2snw=Min(w21s,w22s).
End if.
End if.

Compute Max012nw=Max (w0snw,w1snw,w2snw).

Do If (w3s > 1).
Do If (sysmis (w0snw) and sysmis (w1snw) and sysmis (w2snw)).
Compute w3snw=Min(w3s,w31s,w32s,w4s,w41s,w42s,w43s).
Else IF (w3s gt Max012nw).
Compute w3snw=w3s.
Else IF (w3s LE Max012nw and w31S gt Max012nw).
Compute w3snw=w31s.
Else if (w3s LE Max012nw and w31S LE Max012nw and w32s gt Max012nw).
Compute w3snw=w32s.
End if.
End if.

Compute Mx0123nw=Max (w0snw,w1snw,w2snw,w3snw).

Do If (w4s > 1).
Do If (sysmis (w0snw) and sysmis (w1snw) and sysmis (w2snw) and sysmis (w3snw)).
Compute w4snw=Min(w4s,w41s,w42s,w43s).
Else IF (w4s gt Mx0123nw).
Compute w4snw=w4s.
Else IF (w4s LE Mx0123nw and w41S gt Mx0123nw).
Compute w4snw=w41s.
Else if (w4s LE Mx0123nw and w41S LE Mx0123nw and w42s gt Mx0123nw).
Compute w4snw=w42s.
Else if (w4s LE Mx0123nw and w41S LE Mx0123nw and w42s LE Mx0123nw and
 w43s gt Mx0123nw).
Compute w4snw=w43s.
End if.
End if.


If (max0 GE w1snw)w1snw=0.
If (max0 GE w2snw)w2snw=0.
If (max0 GE w3snw)w3snw=0.
If (max0 GE w4snw)w4snw=0.
If (max1 GE w2snw)w2snw=0.
If (max1 GE w3snw)w3snw=0.
If (max1 GE w4snw)w4snw=0.
If (max2 GE w3snw)w3snw=0.
If (max2 GE w4snw)w4snw=0.
If (max3 GE w4snw)w4snw=0.

Compute Max4e=Max(w4e,w41e,w42e,w43e).

Compute w0syr=Trunc(w0snw/10000).
Compute w0smo=Trunc(w0snw/100)-(100*w0syr).
Compute w0sday=(w0snw-(10000*w0syr)-(100*w0smo)).
COMPUTE Datew0s = DATE.MDY(w0smo,w0sday,w0syr) .
EXECUTE .
```

```
Compute w1syr=Trunc(w1snw/10000).
Compute w1smo=Trunc(w1snw/100)-(100*w1syr).
Compute w1sday=(w1snw-(10000*w1syr)-(100*w1smo)).
COMPUTE Datew1s = DATE.MDY(w1smo,w1sday,w1syr) .
EXECUTE .

Compute w2syr=Trunc(w2snw/10000).
Compute w2smo=Trunc(w2snw/100)-(100*w2syr).
Compute w2sday=(w2snw-(10000*w2syr)-(100*w2smo)).
COMPUTE Datew2s = DATE.MDY(w2smo,w2sday,w2syr) .
EXECUTE .

Compute w3syr=Trunc(w3snw/10000).
Compute w3smo=Trunc(w3snw/100)-(100*w3syr).
Compute w3sday=(w3snw-(10000*w3syr)-(100*w3smo)).
COMPUTE Datew3s = DATE.MDY(w3smo,w3sday,w3syr) .
EXECUTE .

Compute w4syr=Trunc(w4snw/10000).
Compute w4smo=Trunc(w4snw/100)-(100*w4syr).
Compute w4sday=(w4snw-(10000*w4syr)-(100*w4smo)).
COMPUTE Datew4s = DATE.MDY(w4smo,w4sday,w4syr) .
EXECUTE .


Compute w4yre=Trunc(max4e/10000).
Compute w4moe=Trunc(max4e/100)-(100*w4yre).
Compute w4daye=(max4e-(10000*w4yre)-(100*w4moe)).
COMPUTE Datew4e = DATE.MDY(w4moe,w4daye,w4yre) .
EXECUTE .


Compute dw0w1=datew1s-datew0s.
Compute mnthw0w1=(dw0w1/86400)/30.

Compute dw0w2=datew2s-datew0s.
Compute mnthw0w2=(dw0w2/86400)/30.

Compute dw0w3=datew3s-datew0s.
Compute mnthw0w3=(dw0w3/86400)/30.

Compute dw0w4=datew4s-datew0s.
Compute mnthw0w4=(dw0w4/86400)/30.

Compute dw1w2=datew2s-datew1s.
Compute mnthw1w2=(dw1w2/86400)/30.

Compute dw1w3=datew3s-datew1s.
Compute mnthw1w3=(dw1w3/86400)/30.

Compute dw1w4=datew4s-datew1s.
Compute mnthw1w4=(dw1w4/86400)/30.

Compute dw2w3=datew3s-datew2s.
```

```
Compute mnthw2w3=(dw2w3/86400)/30.

Compute dw2w4=datew4s-datew2s.
Compute mnthw2w4=(dw2w4/86400)/30.


Compute dw3w4=datew4s-datew3s.
Compute mnthw3w4=(dw3w4/86400)/30.

Compute dw4w4e=datew4e-datew4s.
Compute mntw4w4e=(dw4w4e/86400)/30.


**********Comments:Recoding w5-w9 dates in ascending order**********

Compute Max5=Max (w5s,w51s).
Compute Max6=Max (w6s,w61s).
Compute Max7=Max (w7s,w71s).
Compute Max8=Max (w8s,w81s).
Compute Max9=Max (w9s,w91s).


IF (w5s gt 1) w5snw = MIN(w5s,w51s,w6s,w61s,w7s,w71s,w8s,w81s,w9s,w91s) .
EXECUTE .

Do If (w6s > 1).
Do If (sysmis (w5snw)).
Compute w6snw=Min(w6s,w61s,w7s,w71s,w8s,w81s,w9s,w91s).
Else IF (w6s gt w5snw).
Compute w6snw=w6s.
Else IF (w6s LE w5snw and w61s gt w5snw).
Compute w6snw=w61s.
End if.
End if.

Compute Max56nw=Max(w5snw,w6snw).

Do If (w7s > 1).
Do If (sysmis (w5snw) and sysmis (w6snw)).
Compute w7snw=Min(w7s,w71s,w8s,w81s,w9s,w91s).
Else IF (w7s gt Max56nw).
Compute w7snw=w7s.
Else IF (w7s LE Max56nw and w71s gt Max56nw).
Compute w7snw=w71s.
End if.
End if.

Compute Max567nw=Max (w5snw,w6snw,w7snw).

Do If (w8s > 1).
Do If (sysmis (w5snw) and sysmis (w6snw) and sysmis (w7snw)).
Compute w8snw=Min(w8s,w81s,w9s,w91s).
Else IF (w8s gt Max567nw).
Compute w8snw=w8s.
```

```
Else IF (w8s LE Max567nw and w81S gt Max567nw).
Compute w8snw=w81s.
End if
End if

Compute Mx5678nw=Max (w5snw,w6snw,w7snw,w8snw).

Do If (w9s > 1).
Do If (sysmis (w5snw) and sysmis (w6snw) and sysmis (w7snw) and sysmis (w8snw)).
Compute w9snw=Min(w9s,w91s).
Else IF (w9s gt Mx5678nw).
Compute w9snw=w9s.
Else IF (w9s LE Mx5678nw and w91s gt Mx5678nw).
Compute w9snw=w91s.
End if.
End if.

If (max5 GE w6snw)w6snw=0.
If (max5 GE w7snw)w7snw=0.
If (max5 GE w8snw)w8snw=0.
If (max5 GE w9snw)w9snw=0.
If (max6 GE w7snw)w7snw=0.
If (max6 GE w8snw)w8snw=0.
If (max6 GE w9snw)w9snw=0.
If (max7 GE w8snw)w8snw=0.
If (max7 GE w9snw)w9snw=0.
If (max8 GE w9snw)w9snw=0.

Compute w5syr=Trunc(w5snw/10000).
Compute w5smo=Trunc(w5snw/100)-(100*w5syr).
Compute w5sday=(w5snw-(10000*w5syr)-(100*w5smo)).
COMPUTE Datew5s = DATE.MDY(w5smo,w5sday,w5syr) .
EXECUTE .
Compute w6syr=Trunc(w6snw/10000).
Compute w6smo=Trunc(w6snw/100)-(100*w6syr).
Compute w6sday=(w6snw-(10000*w6syr)-(100*w6smo)).
COMPUTE Datew6s = DATE.MDY(w6smo,w6sday,w6syr) .
EXECUTE .
Compute w7syr=Trunc(w7snw/10000).
Compute w7smo=Trunc(w7snw/100)-(100*w7syr).
Compute w7sday=(w7snw-(10000*w7syr)-(100*w7smo)).
COMPUTE Datew7s = DATE.MDY(w7smo,w7sday,w7syr) .
EXECUTE .
Compute w8syr=Trunc(w8snw/10000).
Compute w8smo=Trunc(w8snw/100)-(100*w8syr).
Compute w8sday=(w8snw-(10000*w8syr)-(100*w8smo)).
COMPUTE Datew8s = DATE.MDY(w8smo,w8sday,w8syr) .
EXECUTE .
Compute w9syr=Trunc(w9snw/10000).
Compute w9smo=Trunc(w9snw/100)-(100*w9syr).
Compute w9sday=(w9snw-(10000*w9syr)-(100*w9smo)).
COMPUTE Datew9s = DATE.MDY(w9smo,w9sday,w9syr) .
EXECUTE .
```

```
Compute Max9e=Max(w9e,w91e).
Compute w9yre=Trunc(max9e/10000).
Compute w9moe=Trunc(max9e/100)-(100*w9yre).
Compute w9daye=(max9e-(10000*w9yre)-(100*w9moe)).
COMPUTE Datew9e = DATE.MDY(w9moe,w9daye,w9yre) .
EXECUTE .


Compute dw5w6=datew6s-datew5s.
Compute mnthw5w6=(dw5w6/86400)/30.

Compute dw5w7=datew7s-datew5s.
Compute mnthw5w7=(dw5w7/86400)/30.

Compute dw5w8=datew8s-datew5s.
Compute mnthw5w8=(dw5w8/86400)/30.

Compute dw5w9=datew9s-datew5s.
Compute mnthw5w9=(dw5w9/86400)/30.

Compute dw6w7=datew7s-datew6s.
Compute mnthw6w7=(dw6w7/86400)/30.

Compute dw6w8=datew8s-datew6s.
Compute mnthw6w8=(dw6w8/86400)/30.

Compute dw6w9=datew9s-datew6s.
Compute mnthw6w9=(dw6w9/86400)/30.

Compute dw7w8=datew8s-datew7s.
Compute mnthw7w8=(dw7w8/86400)/30.

Compute dw7w9=datew9s-datew7s.
Compute mnthw7w9=(dw7w9/86400)/30.


Compute dw8w9=datew9s-datew8s.
Compute mnthw8w9=(dw8w9/86400)/30.

Compute dw9w9e=datew9e-datew9s.
Compute mntw9w9e=(dw9w9e/86400)/30.

********Comments: Recoding of Survey Data and Computation of Censored Data compute**********
enddate = date.mdy(5,1,97).
COMPUTE rdesdate = datef1s .
IF (missing(rdesdate)) rdesdate = datef2s.
IF (missing(rdesdate)) rdesdate = datef3s.
IF (missing(rdesdate)) rdesdate = datef4s.
IF (missing(rdesdate)) rdesdate = datef5s.

compute #m0 = min(datew1s,datew2s,datew3s,datew4s,rdesdate).
compute #m1 = min(datew2s,datew3s,datew4s,rdesdate).
compute #m2 = min(datew3s,datew4s,rdesdate).
compute #m3 = min(datew4s,rdesdate).
```

```
compute #m5 = min(datew6s,datew7s,datew8s,datew9s).
compute #m6 = min(datew7s,datew8s,datew9s).
compute #m7 = min(datew8s,datew9s).
if(dw0srvy < datew0s | (missing(datew0s) & (dw0srvy < #m0 | missing(#m0)))) datew0s = dw0srvy.
if(dw1srvy < datew1s | (missing(datew1s) & (dw1srvy < #m1 | missing(#m1)))) datew1s = dw1srvy.
if(dw2srvy < datew2s | (missing(datew2s) & (dw2srvy < #m2 | missing(#m2)))) datew2s = dw2srvy.
if(dw3srvy < datew3s | (missing(datew3s) & (dw3srvy < #m3 | missing(#m3)))) datew3s = dw3srvy.
if(dw4srvy < datew4s | (missing(datew4s) & (dw4srvy < rdesdate | missing(rdesdate)))) datew4s =
dw4srvy.
if(dw5srvy < datew5s | (missing(datew5s) & (dw5srvy < #m5 | missing(#m5)))) datew5s = dw5srvy.
if(dw6srvy < datew6s | (missing(datew6s) & (dw6srvy < #m6 | missing(#m6)))) datew6s = dw6srvy.
if(dw7srvy < datew7s | (missing(datew7s) & (dw7srvy < #m7 | missing(#m7)))) datew7s = dw7srvy.
if(dw8srvy < datew8s | (missing(datew8s) & (dw8srvy < datew9s | missing(datew9s)))) datew8s =
dw8srvy.
if(dw9srvy < datew9s | (missing(datew9s) & (dw9srvy > 0))) datew9s = dw9srvy.
execute.

compute mnthw0w1 = $sysmis.
compute mnthw0w2 = $sysmis.
compute mnthw0w3 = $sysmis.
compute mnthw0w4 = $sysmis.
compute mnthw0rd = $sysmis.
compute mnthw1w2 = $sysmis.
compute mnthw1w3 = $sysmis.
compute mnthw1w4 = $sysmis.
compute mnthw1rd = $sysmis.
compute mnthw2w3 = $sysmis.
compute mnthw2w4 = $sysmis.
compute mnthw2rd = $sysmis.
compute mnthw3w4 = $sysmis.
compute mnthw3rd = $sysmis.
compute mnthw4rd = $sysmis.
IF (datew0s > 1 and datew1s > 1) MNTHW0W1 = (datew1s - datew0s)/(60*60*24*30).
IF (datew0s > 1 and datew2s > 1) MNTHW0W2 = (datew2s - datew0s)/(60*60*24*30).
IF (datew0s > 1 and datew3s > 1) MNTHW0W3 = (datew3s - datew0s)/(60*60*24*30).
IF (datew0s > 1 and datew4s > 1) MNTHW0W4 = (datew4s - datew0s)/(60*60*24*30).
IF (datew0s > 1 and rdesdate > 1) Mnthw0rd = (rdesdate - datew0s)/(60*60*24*30).
IF (datew1s > 1 and datew2s > 1) MNTHW1W2 = (datew2s - datew1s)/(60*60*24*30).
IF (datew1s > 1 and datew3s > 1) MNTHW1W3 = (datew3s - datew1s)/(60*60*24*30).
IF (datew1s > 1 and datew4s > 1) MNTHW1W4 = (datew4s - datew1s)/(60*60*24*30).
IF (datew1s > 1 and rdesdate > 1) Mnthw1rd = (rdesdate - datew1s)/(60*60*24*30).
IF (datew2s > 1 and datew3s > 1) MNTHW2W3 = (datew3s - datew2s)/(60*60*24*30).
IF (datew2s > 1 and datew4s > 1) MNTHW2W4 = (datew4s - datew2s)/(60*60*24*30).
IF (datew2s > 1 and rdesdate > 1) Mnthw2rd = (rdesdate - datew2s)/(60*60*24*30).
IF (datew3s > 1 and datew4s > 1) MNTHW3W4 = (datew4s - datew3s)/(60*60*24*30).
IF (datew3s > 1 and rdesdate > 1) Mnthw3rd = (rdesdate - datew3s)/(60*60*24*30).
IF (datew4s > 1 and rdesdate > 1) Mnthw4rd = (rdesdate - datew4s)/(60*60*24*30).
compute status0 = 0.
compute status1 = 0.
compute status2 = 0.
compute status3 = 0.
compute status4 = 0.
IF (mnthw0w1> 0 or mnthw0w2 > 0 or mnthw0w3 > 0 or mnthw0w4 > 0 or mnthw0rd > 0) status0 = 1 .
IF (mnthw1w2 > 0 or mnthw1w3 > 0 or mnthw1w4 > 0 or mnthw1rd > 0) status1 = 1 .
```

```
IF (mnthw2w3 > 0 or mnthw2w4 > 0 or mnthw2rd > 0) status2 = 1 .
IF (mnthw3w4 > 0 or mnthw3rd > 0) status3 = 1 .
if (mnthw4rd > 0) status4 = 1.
value labels
 status0 status1 status2 status3 status4
 0 "Censored" 1 "Moved Up".
if (datew0s > 1 & sysmis(MEAN(datew1s, datew2s, datew3s, datew4s, rdesdate))) w0censor = 1.
if (datew1s > 1 & sysmis(mean(datew2s, datew3s, datew4s, rdesdate))) w1censor = 1.
if (datew2s > 1 & sysmis(mean(datew3s, datew4s, rdesdate))) w2censor =1.
if (datew3s > 1 & sysmis(mean(datew4s, rdesdate))) w3censor = 1.
if (datew4s > 1 & sysmis(rdesdate)) w4censor = 1.
value labels
 w0censor w1censor w2censor w3censor w4censor
 1 "Censored at Level".
DO IF (w0censor = 1) .
 compute mnthw0w1 = (enddate - datew0s)/(60*60*24*30) .
 compute mnthw0w2 = mnthw0w1.
 compute mnthw0w3 = mnthw0w1.
 compute mnthw0w4 = mnthw0w1.
 compute mnthw0rd = mnthw0w1.
END IF.
DO IF (w1censor = 1).
 compute mnthw1w2 = (enddate - datew1s)/(60*60*24*30) .
 compute mnthw1w3 = mnthw1w2.
 compute mnthw1w4 = mnthw1w2.
 compute mnthw1rd = mnthw1w2.
END IF.
DO IF (w2censor = 1).
 compute mnthw2w3 = (enddate - datew2s)/(60*60*24*30) .
 compute mnthw2w4 = mnthw2w3.
 compute mnthw2rd = mnthw2w3.
END IF.
DO IF (w3censor = 1).
 compute mnthw3w4 = (enddate - datew3s)/(60*60*24*30) .
 compute mnthw3rd = mnthw3w4.
END IF.
DO IF (w4censor = 1).
 compute mnthw4rd = (enddate - datew4s)/(60*60*24*30) .
END IF.
execute.
RECODE
  mnthw0rd mnthw1rd mnthw2rd mnthw3rd mnthw4rd  (Lowest thru 0=SYSMIS) .
EXECUTE .

**********Comments: Defining Transiency File**********

SET
  BLANKS=SYSMIS BLANKS=SYSMIS
 UNDEFINED=WARN.
DATA LIST
 FILE='c:\Share\SAUSD data\transrte.dat' FIXED RECORDS=1 TABLE /1 stndid 1
-6 schl 7-8(A) schlyr 9-10 scltrm 11-11 date 12-17 recortyp 18-19(A) code 20
-22(A) .
EXECUTE.
```

```
Value Labels Code 'BP' 'Between Districts'
             'NC' 'New Students out of Country'
             'NS' 'New Students out of State'
             'RA' 'Returning from Alternative Program'
             'RE' 'Regular Enrollment'
             'RN' 'Returning Not Curr Enrollment'
             'RS' 'Re enter to specific school'
             'TC' 'Transfer from another CA school'
             'TP' 'Trasfer at parents request'
             'WS' 'Moved within SAUSD'
             'DE' 'Deceased'
             'DR' 'Dropout second only'
             'EP' 'Expelled'
             'ET' 'Exempt Parents request'
             'FW' 'Fulltime work experience'
             'GR' 'Graduated'
             'HE' 'Health'
             'HT' 'Home Teaching'
             'LC' 'Moved out of country'
             'LS' 'Moved out of State'
             'MC' 'Moved within State'
             'MG' 'Mid Year Grad'
             'MV' 'Moved'
             'NS' 'No show'
             'PA' 'GED CHSPE passed'
             'PB' 'Inter district permit'
             'PW' 'Intra district permit'
             'RC' 'Release from compulsory educ'
             'ST' 'Student Record Requested'
             'TA' 'Transfer to adult education'
             'TP' 'Transfer to alternative program'
             'UN' 'Unknown no verification'
             'WS' 'Moved within district'
             'AP' 'Alternative Program'
             'AR' 'Administrative Request'
             'BC' 'Balancing Class'
             'CC' 'Course Completed Previously'
             'LCH' 'Level Change'
             'MS' 'Master Scheduling Change'
             'PFA' 'Perfroming Arts Change'
             'RF' 'Repeat Failed Course'
             'RP' 'Remedial Attendance Program'
             'SA' 'Sport Added'
             'SC' 'Sport Changed'
             'SD' 'Sport Added'
             'TPC' 'Teacher Parent Conference'
             'TR' 'Teacher Request'
             'LCH' 'Level Change'.

**********Comments: Creating school levels (Elementary, Middle, Secondary) **********
RECODE
 code
```

```
('ACC'=1) ('AP'=2) ('AR'=3) ('BP'=4) ('CC'=5) ('DE'=6) ('DR'=7)
('EP'=8) ('ET'=9) ('FC'=10) ('FW'=11) ('GR'=12) ('HE'=13) ('HT'=14)
('LC'=15) ('LS'=16) ('MC'=17) ('MG'=18) ('MS'=19) ('MV'=20) ('NC'=21)
('NS'=22) ('P7'=23) ('P9'=24) ('PB'=25) ('PR'=26) ('PW'=27)
('RA'=28) ('RC'=29) ('RE'=30) ('RS'=31) ('RU'=32) ('TA'=33) ('TC'=34)
('TP'=35) ('TR'=36) ('UN'=37) ('WS'=38) INTO Codenw .
EXECUTE .

Recode Schl ('A6','A7','A8','A9'=50)('S1','S2','S3','S4'=95)
('A1','A2','A3','A4'=51)('51'=51)('54'=54)('B1','B2','B3','B4'=52)('62','C4'=62)
('D1','D2','D3','D4'=54)('R1','R2','R3','R4'=94)('70'=70)('55'=55)
('I1','I2','I3','I4'=93)('O1','O2','O3','O4'=56)('F1','F2','F3','F4'=57)
('58'=58)('W1','W2','W3','W4'=92)('98','C6','C7','C8','C9'=98)
('G1','G2','G3','G4'=59)('H1','H2','H3','H4'=60)('J1','J2','J3','J4'=61)
('K1','K2','K3','K4'=63)('77'=77)('64'=64)('L1','L2','L3','L4'=65)
('66'=66)('P1','P2','P3','P4'=43)('75'=75)('M1','M2','M3','M4'=67)
('68'=68)('H6','H7','H8','H9'=69)('69'=69)('73'=73)('42'=42)
('B6','B7','B8','B9'=97)('Z1','Z2','Z3','Z4'=71)('N1','N2','N3','N4'=72)
('D6','D7','D8','D9'=83)('L6','L7','L8','L9'=80)('79'=79)
('85'=85)('S6','S7','S8','S9'=78)('E6','E7','E8','E9'=87)('84'=84)
('91'=91)('90'=90)('76'=76)('86'=86)('81'=81)('82'=82)('83'=83)('87'=87)
('95'=95)into schlnme.

Recode schlnme(50,95,51,52,62,54,94,70,55,93,56,57,
58,92,98,59,60,61,63,77,64,65,66,43,75,67,68,69,73,42,97,
71,72=1)(83,80,79,85,78,87,84=2)(91,90,76,86,81,82=3)
 into schltyp.

Variable Labels schltyp 'Type of School'.
Value Labels schltyp 1'Elementary'
                     2'Middle'
                     3'High School'.

USE ALL.
COMPUTE filter_$=(codenw30=1 and dummy1=stndid and dschlyr=schlyr and
 dschlnme=schlnme and dcode=codenw).
VARIABLE LABEL filter_$ 'codenw30=1 and dummy1=stndid and dschlyr=schlyr and'+
' dschlnme=schlnme and dcode=codenw (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .


COMPUTE Dschlnme = LAG(schlnme) .
EXECUTE .
COMPUTE Dummy1 = LAG(stndid) .
EXECUTE .
USE ALL.
COMPUTE filter_$=(codenw=30 and dummy1=stndid and dschlnme=schlnme).
VARIABLE LABEL filter_$ 'codenw=30 and dummy1=stndid and dschlnme=schlnme'+
' (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
```

```
FILTER BY filter_$.
EXECUTE

COMPUTE Dschlnme = LAG(schlnme) .
EXECUTE .
COMPUTE Dummy1 = LAG(stndid) .
EXECUTE .
COMPUTE Dcodenw = LAG(codenw) .
EXECUTE .
COMPUTE Dschlyr = LAG(schlyr) .
EXECUTE .
COMPUTE Ddate = LAG(date) .
EXECUTE .
USE ALL.
COMPUTE filter_$=(stndid=dummy1 and dschlnme=schlnme and dcodenw=codenw and
  ddate=date).
VARIABLE LABEL filter_$ 'stndid=dummy1 and dschlnme=schlnme and'+
 ' dcodenw=codenw and ddate=date (FILTER)'.
VALUE LABELS filter_$  0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .
Temporary.
Select if (sysmis(relend)).
Frequencies variables=stndid.
COMPUTE Dschlnme = LAG(schlnme) .
EXECUTE .
COMPUTE Dummy1 = LAG(stndid) .
EXECUTE .
COMPUTE Dcodenw = LAG(codenw) .
EXECUTE .
COMPUTE Dschlyr = LAG(schlyr) .
EXECUTE .
COMPUTE Ddate = LAG(date) .
EXECUTE .
USE ALL.
COMPUTE filter_$=(dummy1=stndid and dschlnme=schlnme).
VARIABLE LABEL filter_$ 'dummy1=stndid and dschlnme=schlnme (FILTER)'.
VALUE LABELS filter_$  0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .


USE ALL.
COMPUTE filter_$=(dummy1=stndid and dschlnme=schlnme and dschlyr=schlyr).
VARIABLE LABEL filter_$ 'dummy1=stndid and dschlnme=schlnme and'+
 ' dschlyr=schlyr (FILTER)'.
VALUE LABELS filter_$  0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .
IF (dummy1=stndid) diffdte = date-ddate .
EXECUTE .
```

```
Temporary
Select if (stnschl=1)
Frequencies variables=diffdte.
Temporary.
Select if (stnschl=1).
Frequencies variables=codenw.

**********Comments: Teacher info Definition**********

Variable label TBDATE 'Teacher Birth Date'
          THDATE 'Teacher Date of Hire'
          EDUCLVL 'Education level of teacher'
CRCODE1, CRCODE2, schlnme
 CRCODE3,CRCODE4, CRCODE5, CRCODE6 'Credential Code'
CRCATG1, CRCATG2, CRCATG3,CRCATG4, CRCATG5, CRCATG6 'Credential Category'.

Value Labels EDUCLVL 'A' 'Associate'
                'B' 'Bachelor'
                'C' 'Credential'
                'M' 'Master'
                'P' 'Doctorate'/
Crcatg1, Crcatg2, Crcatg3, Crcatg4, Crcatg5, Crcatg6
                'A' 'Life'
                'B' 'Clear'
                'C' 'Prelimanry'
                'D' 'Partial Fulfillment'
                'E' 'Emergency'
                'F' 'Provisional'
                'G' 'Temp County Certificate'
                'H' 'Intern'
                'I' '1 Yr non-renewable'
                'J' 'Professional Clear'
                'K' 'Supplementary Authoriz'
                'L' 'Comm College DSPS Waiver'
                'R' 'Restricted'
                'W' 'Waiver'
                'Z' 'Conditional Life'/
CRCODE1, CRCODE2, CRCODE3,CRCODE4, CRCODE5, CRCODE6
                'AA' 'Administrative Services'
                'AB' 'Voc FT-SUPV and Coordination'
                'AC' 'STD Adminstration'
                'AD' 'Standard Supervision'
                'AE' 'General Admin'
                'AF' 'Secondary Admin'
                'AG' 'Elementary Admin'
                'AH' 'Sec Admin Trd and indust ed'
                'AI' 'Secondary Supervision'
                'AJ' 'Elementary Supervision'
                'AK' 'Vocational Supervisor'
                'AL' 'Supervisor Credential'
                'AO' 'Child Welf ATTD Supervisor'
                'BA' 'Mult Subj Bil EMPH BCC'
                'BB' 'Single Sub bil EMPH'
                'BC' 'Bil Cert of Compt'
```

'BD' 'Bil Cross Cult Spec'
'BE' 'Lang Dev Spec Cert'
'BF' 'Bil Cert of Assess Comp'
'BG' 'BCC I'
'BH' 'BCC II'
'BI' 'BCC III'
'BJ' 'BCC IV'
'BK' 'LDS I'
'BL' 'LDS Grandfathered'
'BM' 'Enroll in Biling Prog'
'BN' 'LDS Passed exam'
'BO' 'CLAD multi subj'
'BP' 'CLAD Cross Cult Lang acad dev'
'BQ' 'BCLAD Biling Cross Cult Lang A'
'CA' 'Child Dev prmt w supervision'
'CC' 'Develop Center Permit'
'CD' 'Chld Dev Prmt chngd back'
'CE' 'Spec Center Permit'
'CF' 'EC 8360 Preschl 12 units w HE'
'DA' 'LTD Driver Trng Lab only Ryan'
'DB' 'Driver Trng Ryan Desig Subj'
'DC' 'F T Public Safe & Accd prev dr'
'DD' 'Public Safety Accd prev Dr Ed'
'DE' 'Gen and STD w units Dr Ed and Trn'
'EA' 'General Adult Education'
'EB' 'Adult ED Lip Rdg Hard of Heari'
'EC' 'SDS Adult Educ F T or P T'
'HA' 'Healthy Services Specialist'
'HB' 'School Physician P T'
'HC' 'Nurse STD Desig Subj'
'HD' 'Clin Psychol STd Des Health'
'HE' 'Sch Nurse Health and Dev'
'HF' 'School Physician License only'
'HG' 'Schl optometrist health and dev'
'HH' 'Schl optometrist License only'
'HI' 'Schl Audiometrist License only'
'HJ' 'Schl Audiologist License only'
'LA' 'Librarian Lib Media Tchr Ryan'
'LB' 'STD Librarian Elem K-9 K-12'
'LC' 'STD Librarian Sec K-9 K-12'
'LD' 'STD ECE Librarian K-3 K-12'
'LE' 'Librarian STD LTD SPEC PREO□P'
'LF' 'General Librarianship'
'MA' 'Gifted Specialist'
'MB' 'Mathematics Specialist'
'MC' 'Health Specialist'
'MD' 'Agriculture Specialist'
'ME' 'Military Science'
'MF' 'STD Design Sub Aviation'
'MG' 'Milit Drill STD Des Subj'
'MH' 'STD DES FT PT Bus ED'
'MJ' 'DES Subj FT Foreign Language STD'
'MK' 'DEs Subj Afro American STD'
'ML' 'Special Sec Aviation'

'MM' 'Special Sec Art'
'MN' 'Spec Sec Bus Ed FT or PT'
'MP' 'Spec Sec Homemaking'
'MR' 'Spec Sec indust Arts'
'MS' 'Spec Sec Music'
'MT' 'Spec Sec Music Limited Serv'
'MU' 'Nursng ED INc Hlth ED Spec Sec'
'MV' 'Special Sec Physical Ed'
'MW' 'Special Sec Speech Arts'
'PA' 'Ryan Pupil Personnel'
'PB' 'Psychologist PPS Ryan'
'PC' 'Basic PPS Standard'
'PD' 'Psychometrist PPS STD DES SERV'
'PE' 'Psychologist PPS STD DES Service'
'PF' 'Soc Worker PPS STD Des Service'
'PG' 'Pupil Pers Basic General'
'PH' 'Psychometrist PPS General'
'PI' 'Psychol PPS General'
'PJ' 'Schl PSychol General FT PT'
'PK' 'School Psychom General'
'RA' 'Reading Spec Ryan'
'RB' 'RDG Spec Miller Unruh'
'RC' 'Rstr RDG Spec MU RDG Spec'
'SA' 'Visually HDCP Specialist'
'SB' 'Learning HDCP Specialist'
'SC' 'Physically HDCP Specialist'
'SD' 'Severely HDCP Specialist'
'SE' 'Commun HDCP Specicialist'
'SG' 'Emerg Clin Rehab w Spec Cl Aut'
'SH' 'Clin Rehab Lang Spch & Hearing'
'SI' 'Clin Rehab Lang Spch Hrg Audio'
'SJ' 'Clint Rehab Orientat and Mobility'
'SK' 'Resource Spec Cert of Competen'
'SL' 'Adaptive Physical Education'
'SM' 'Clin Rehab Audiology Only'
'SN' 'Visually HDCP STD elem'
'SO' 'Visually HDCP STD Sec'
'SP' 'Visually HDCP Restricted'
'SR' 'Visually HDCP in mobility'
'SS' 'Deaf and Hard of Hear STD elem'
'ST' 'Deaf and Hard of Hear STD sec'
'SU' 'RSTR Deaf and Hard of Hearing'
'SV' 'RSTR Deaf and Blind and LTD Spec PRP'
'SX' 'Speech and Hear HDCP STD elem'
'SY' 'Speech and Hearing HDCP STD Sec'
'SZ' 'RSTR Speech and Hearing Therapy'
'TA' 'Multiple Subject'
'TB' 'Single Subject'
'TC' 'Early Childhood Educ Spec'
'TD' 'Emergency Limited Assignment'
'TE' 'Emergency Limited Authorization'
'TF' 'Emergency 30 day substitute'
'TG' 'Standard Elementary'
'TH' 'Standard Secondary'

'TI' 'Early Childhood Education'
'TJ' 'KG Primary'
'TK' 'General Elem'
'TL' 'Elem and Junior High'
'TM' 'Junior High'
'TN' 'General Secondary'
'TO' 'Exchange Teacher'
'TP' 'Sojourn Teacher'
'TR' 'Eminence'
'TS' 'ED code 44258B sunset June30 92'
'TT' 'Int Schl 6 12 units w elem CRED'
'TU' 'Int Schl 6 12 units w sec cred'
'TV' 'High Schl 9 18 units with cred ec'
'TW' 'Int schl core block assign'
'TX' 'HS Competitive Atheletics Ec'
'TY' 'Spec Skills Comm on Assign Aut'
'TZ' 'Non cred unique skills'
'VA' 'Voc FT Deisgnated Subject'
'VB' 'Voc PT Designated Subject'
'VC' 'Spec Subj FT DES SUBJ Ryan'
'VD' 'PT STD Designated Subjects'
'VE' 'Voc Agriculture STD Design Sub'
'VH' 'Voc Agriculture Special Sec'
'VI' 'Voc CLS A TRD IND PB SV ED SP'
'VJ' 'Voc Cls B TRD TECh Sub RLT SPE'
'VK' 'Voc Cls C1 CRD TRD IN PBL SPEC'
'VL' 'Voc Cls D TRD IN PBL SRV ED SP'
'VM' 'Indus and voc SDS FT and PT'
'VO' 'Indus Arts and occup SDS FT PT'
'XA' 'Mentally Retarded STD elem LTD'
'XB' 'Mentally Retarded STD Sec LTD'
'XC' 'Educable mental retard STD elem'
'XD' 'STD SEC educable Mr K-12'
'XE' 'Res Educable mentally retarded'
'XF' 'Res trainable mentally retarded'
'XG' 'Orthopedically HDCP STD elem'
'XH' 'Orhopedically HDCP STD sec'
'XI' 'Restricted Orthopedically HDCP'
'XJ' 'Visually HDCP Except Child'
'XK' 'Deaf and Hard hearing Except Child'
'XL' 'Speech Corr and Lip Reading Except C'
'XM' 'Mentally retarded Except Child'
'XN' 'Orthopedically HDCP except child'
'XO' 'Corr of Speech Defects Aphasia'
'XP' 'Tchg of the Blind Spec Sec'
'XR' 'TChg of the Part Sight Spec SE'
'XS' 'Tchg of the Deaf Spec sec'
'XT' 'Tchg LIP RDG Spec Sec'
'XU' 'TChg of Mentally retarded Spec'.

Variable label TBDATE 'Teacher Birth Date'
THDATE 'Teacher Date of Hire'
EDUCLVL 'Education level of teacher'
CRCODE1, CRCODE2, schlnme

```
 CRCODE3.CRCODE4. CRCODE5. CRCODE6 'Credential Code'
CRCATG1. CRCATG2. CRCATG3.CRCATG4. CRCATG5. CRCATG6 'Credential Category'.

Value Labels EDUCLVL 'A' 'Associate'
             'B' 'Bachelor'
             'C' 'Credential'
             'M' 'Master'
             'P' 'Doctorate'/
Creatg1. Creatg2. Creatg3. Creatg4. Creatg5. Creatg6
             'A' 'Life'
             'B' 'Clear'
             'C' 'Prelimanry'
             'D' 'Partial Fulfillment'
             'E' 'Emergency'
             'F' 'Provisional'
             'G' 'Temp County Certificate'
             'H' 'Intern'
             'I' '1 Yr non-renewable'
             'J' 'Professional Clear'
             'K' 'Supplementary Authoriz'
             'L' 'Comm College DSPS Waiver'
             'R' 'Restricted'
             'W' 'Waiver'
             'Z' 'Conditional Life'/
CRCODE1. CRCODE2. CRCODE3.CRCODE4. CRCODE5. CRCODE6
             'AA' 'Administrative Services'
             'AB' 'Voc FT-SUPV and Coordination'
             'AC' 'STD Adminstration'
             'AD' 'Standard Supervision'
             'AE' 'General Admin'
             'AF' 'Secondary Admin'
             'AG' 'Elementary Admin'
             'AH' 'Sec Admin Trd and indust ed'
             'AI' 'Secondary Supervision'
             'AJ' 'Elementary Supervision'
             'AK' 'Vocational Supervisor'
             'AL' 'Supervisor Credential'
             'AO' 'Child Welf ATTD Supervisor'
             'BA' 'Mult Subj Bil EMPH BCC'
             'BB' 'Single Sub bil EMPH'
             'BC' 'Bil Cert of Compt'
             'BD' 'Bil Cross Cult Spec'
             'BE' 'Lang Dev Spec Cert'
             'BF' 'Bil Cert of Assess Comp'
             'BG' 'BCC I'
             'BH' 'BCC II'
             'BI' 'BCC III'
             'BJ' 'BCC IV'
             'BK' 'LDS I'
             'BL' 'LDS Grandfathered'
             'BM' 'Enroll in Biling Prog'
             'BN' 'LDS Passed exam'
             'BO' 'CLAD multi subj'
             'BP' 'CLAD Cross Cult Lang acad dev'
```

'BQ' 'BCLAD Biling Cross Cult Lang A'
'CA' 'Child Dev prmt w supervision'
'CC' 'Develop Center Permit'
'CD' 'Chld Dev Prmt chngd back'
'CE' 'Spec Center Permit'
'CF' 'EC 8360 Preschl 12 units w HE'
'DA' 'LTD Driver Trng Lab only Ryan'
'DB' 'Driver Trng Ryan Desig Subj'
'DC' 'F T Public Safe & Accd prev dr'
'DD' 'Public Safety Accd prev Dr Ed'
'DE' 'Gen and STD w units Dr Ed and Trn'
'EA' 'General Adult Education'
'EB' 'Adult ED Lip Rdg Hard of Heari'
'EC' 'SDS Adult Educ F T or P T'
'HA' 'Healthy Services Specialist'
'HB' 'School Physician P T'
'HC' 'Nurse STD Desig Subj'
'HD' 'Clin Psychol STd Des Health'
'HE' 'Sch Nurse Health and Dev'
'HF' 'School Physician License only'
'HG' 'Schl optometrist health and dev'
'HH' 'Schl optometrist License only'
'HI' 'Schl Audiometrist License only'
'HJ' 'Schl Audiologist License only'
'LA' 'Librarian Lib Media Tchr Ryan'
'LB' 'STD Librarian Elem K-9 K-12'
'LC' 'STD Librarian Sec K-9 K-12'
'LD' 'STD ECE Librarian K-3 K-12'
'LE' 'Librarian STD LTD SPEC PREO□P'
'LF' 'General Librarianship'
'MA' 'Gifted Specialist'
'MB' 'Mathematics Specialist'
'MC' 'Health Specialist'
'MD' 'Agriculture Specialist'
'ME' 'Military Science'
'MF' 'STD Design Sub Aviation'
'MG' 'Milit Drill STD Des Subj'
'MH' 'STD DES FT PT Bus ED'
'MJ' 'DES Subj FT Foreign Language STD'
'MK' 'DEs Subj Afro American STD'
'ML' 'Special Sec Aviation'
'MM' 'Special Sec Art'
'MN' 'Spec Sec Bus Ed FT or PT'
'MP' 'Spec Sec Homemaking'
'MR' 'Spec Sec indust Arts'
'MS' 'Spec Sec Music'
'MT' 'Spec Sec Music Limited Serv'
'MU' 'Nursng ED INc Hlth ED Spec Sec'
'MV' 'Special Sec Physical Ed'
'MW' 'Special Sec Speech Arts'
'PA' 'Ryan Pupil Personnel'
'PB' 'Psychologist PPS Ryan'
'PC' 'Basic PPS Standard'
'PD' 'Psychometrist PPS STD DES SERV'

'PE' 'Psychologist PPS STD DES Service'
'PF' 'Soc Worker PPS STD Des Service'
'PG' 'Pupil Pers Basic General'
'PH' 'Psychometrist PPS General'
'PI' 'Psychol PPS General'
'PJ' 'Schl PSychol General FT PT'
'PK' 'School Psychom General'
'RA' 'Reading Spec Ryan'
'RB' 'RDG Spec Miller Unruh'
'RC' 'Rstr RDG Spec MU RDG Spec'
'SA' 'Visually HDCP Specialist'
'SB' 'Learning HDCP Specialist'
'SC' 'Physically HDCP Specialist'
'SD' 'Severely HDCP Specialist'
'SE' 'Commun HDCP Specicialist'
'SG' 'Emerg Clin Rehab w Spec Cl Aut'
'SH' 'Clin Rehab Lang Spch & Hearing'
'SI' 'Clin Rehab Lang Spch Hrg Audio'
'SJ' 'Clint Rehab Orientat and Mobility'
'SK' 'Resource Spec Cert of Competen'
'SL' 'Adaptive Physical Education'
'SM' 'Clin Rehab Audiology Only'
'SN' 'Visually HDCP STD elem'
'SO' 'Visually HDCP STD Sec'
'SP' 'Visually HDCP Restricted'
'SR' 'Visually HDCP in mobility'
'SS' 'Deaf and Hard of Hear STD elem'
'ST' 'Deaf and Hard of Hear STD sec'
'SU' 'RSTR Deaf and Hard of Hearing'
'SV' 'RSTR Deaf and Blind and LTD Spec PRP'
'SX' 'Speech and Hear HDCP STD elem'
'SY' 'Speech and Hearing HDCP STD Sec'
'SZ' 'RSTR Speech and Hearing Therapy'
'TA' 'Multiple Subject'
'TB' 'Single Subject'
'TC' 'Early Childhood Educ Spec'
'TD' 'Emergency Limited Assignment'
'TE' 'Emergency Limited Authorization'
'TF' 'Emergency 30 day substitute'
'TG' 'Standard Elementary'
'TH' 'Standard Secondary'
'TI' 'Early Childhood Education'
'TJ' 'KG Primary'
'TK' 'General Elem'
'TL' 'Elem and Junior High'
'TM' 'Junior High'
'TN' 'General Secondary'
'TO' 'Exchange Teacher'
'TP' 'Sojourn Teacher'
'TR' 'Eminence'
'TS' 'ED code 44258B sunset June30 92'
'TT' 'Int Schl 6 12 units w elem CRED'
'TU' 'Int Schl 6 12 units w sec cred'
'TV' 'High Schl 9 18 units with cred ec'

```
'TW' 'Int schl core block assign'
'TX' 'HS Competitive Atheletics Ec'
'TY' 'Spec Skills Comm on Assign Aut'
'TZ' 'Non cred unique skills'
'VA' 'Voc FT Deisgnated Subject'
'VB' 'Voc PT Designated Subject'
'VC' 'Spec Subj FT DES SUBJ Ryan'
'VD' 'PT STD Designated Subjects'
'VE' 'Voc Agriculture STD Design Sub'
'VH' 'Voc Agriculture Special Sec'
'VI' 'Voc CLS A TRD IND PB SV ED SP'
'VJ' 'Voc Cls B TRD TECh Sub RLT SPE'
'VK' 'Voc Cls C1 CRD TRD IN PBL SPEC'
'VL' 'Voc Cls D TRD IN PBL SRV ED SP'
'VM' 'Indus and voc SDS FT and PT'
'VO' 'Indus Arts and occup SDS FT PT'
'XA' 'Mentally Retarded STD elem LTD'
'XB' 'Mentally Retarded STD Sec LTD'
'XC' 'Educable mental retard STD elem'
'XD' 'STD SEC educable Mr K-12'
'XE' 'Res Educable mentally retarded'
'XF' 'Res trainable mentally retarded'
'XG' 'Orthopedically HDCP STD elem'
'XH' 'Orhopedically HDCP STD sec'
'XI' 'Restricted Orthopedically HDCP'
'XJ' 'Visually HDCP Except Child'
'XK' 'Deaf and Hard hearing Except Child'
'XL' 'Speech Corr and Lip Reading Except C'
'XM' 'Mentally retarded Except Child'
'XN' 'Orthopedically HDCP except child'
'XO' 'Corr of Speech Defects Aphasia'
'XP' 'Tchg of the Blind Spec Sec'
'XR' 'TChg of the Part Sight Spec SE'
'XS' 'Tchg of the Deaf Spec sec'
'XT' 'Tchg LIP RDG Spec Sec'
'XU' 'TChg of Mentally retarded Spec'.

**********Comments: Recoding Teacher information**********
RECODE
 educlvl ('A'='1') ('B'='2') ('M'='3') ('P'='4') .
EXECUTE .
Value Label educlvl 1 'Associate'
                    2 'Bachelor'
                    3 'Masters'
                    4 'Doctorate'.
RECODE
 crcatg1 crcatg2 crcatg3 crcatg4 crcatg5 crcatg6 (CONVERT)
 ('A'=1) ('B'=1) ('J'=1) ('C'=2) ('E'=2) ('G'=2) ('H'=2) ('W'=2)
 INTO crcatnw1 crcatnw2 crcat3nw crcatnw4 crcatnw5 crcatnw6 .
EXECUTE .
Value Label crcatnw1 crcatnw2 crcat3nw crcatnw4
crcatnw5 crcatnw6  1'Fully credentialed'
                   2'Not Fully cred'.
```

```
RECODE
 crcode1 crcode2 crcode3 crcode4 crcode5 crcode6
 ('BA'=1) ('BC'=1) ('BD'=1) ('BG'=1) ('BH'=1) ('BI'=1) ('BJ'=1)
 ('BQ'=1) ('BK'=2) ('BO'=2) ('BP'=2) ('BE'=2) ('BL'=2) ('BN'=2)
 ('EC'=3) ('SB'=3) ('HI'=4) ('LE'=4) ('MA'=3) ('PC'=3) ('RA'=3)
 ('RB'=3) ('SB'=3) ('SC'=3) ('VA'=3) ('TC'=3) ('PA'=4) ('XM'=3)
 ('SD'=3) ('SE'=3) ('SK'=3) ('SS'=3) ('SU'=3) ('SS'=3) ('SZ'=3)
 ('TA'=3) ('TB'=3) ('TF'=3) ('TG'=3) ('TH'=3) ('TI'=3) ('TJ'=3)
 ('TK'=3) ('TN'=3) ('TP'=3) ('VB'=3) ('XC'=3) ('XG'=3) ('XI'=3)
 ('XN'=3) ('AA'=4) ('CC'=4) ('CD'=4) ('SG'=4) INTO crcodnw1 crcodnw2
 crcodnw3 crcodnw4 crcodnw5 crcodnw6 .
EXECUTE .

Value Labels crcodnw1  crcodnw2 crcodnw3  crcodnw4
        crcodnw5  crcodnw6 1 'Bilingual Credential'
                           2 'Cultural Sensitivity credential'
                           3 'Other instructional credentials'
                           4 'Non instructional credentials'.


**********Comments: Creating Teacher categories in Subject and type of credentials **********

COUNT
 FCR = crcatnw1 crcatnw2 crcat3nw crcatnw4 crcatnw5 crcatnw6  (1) .
EXECUTE .
COUNT
 NFCR = crcatnw1 crcatnw2 crcat3nw crcatnw4 crcatnw5 crcatnw6  (2) .
EXECUTE .
COUNT
 Fbiling = crcodnw1 crcodnw2 crcodnw3 crcodnw4 crcodnw5 crcodnw6  (1) .
EXECUTE .
COUNT
 NFbiling = crcodnw1 crcodnw2 crcodnw3 crcodnw4 crcodnw5 crcodnw6  (5) .
EXECUTE .
COUNT
 Fcultr = crcodnw1 crcodnw2 crcodnw3 crcodnw4 crcodnw5 crcodnw6  (2) .
EXECUTE .
COUNT
 NFcultr = crcodnw1 crcodnw2 crcodnw3 crcodnw4 crcodnw5 crcodnw6  (6) .
EXECUTE .
COUNT
 Finstr = crcodnw1 crcodnw2 crcodnw3 crcodnw4 crcodnw5 crcodnw6  (3) .
EXECUTE .
COUNT
 NFinstr = crcodnw1 crcodnw2 crcodnw3 crcodnw4 crcodnw5 crcodnw6  (7) .
EXECUTE .
Do IF (nfcr ge 1 and fcr eq 0).
 Compute group=1.
Else if (Finstr ge 1 and (crcodnw1=1 or crcodnw2=1 or crcodnw3=1 or crcodnw4=1
 or crcodnw5=1 or crcodnw6=1)).
Compute group=3.
Else if (Finstr ge 1 and (crcodnw1=5 or crcodnw2=5 or crcodnw3=5 or crcodnw4=5
 or crcodnw5=5 or crcodnw6=5)).
```

```
Compute group=4.
Else if (Finstr ge 1 and (crcodnw1=2 or crcodnw2=2 or crcodnw3=2 or crcodnw4=2
 or crcodnw5=2 or crcodnw6=2)).
Compute group=5.
Else if (Finstr ge 1 and (crcodnw1=6 or crcodnw2=6 or crcodnw3=6 or crcodnw4=6
 or crcodnw5=6 or crcodnw6=6)).
Compute group=6.
 Else if (Finstr ge 1).
 Compute group=2.
End if.
Value Labels group 1'No Full cred'
              2'Full Cred istructional services'
              3'FC instr and FC biling'
              5'FC inst and FC cultural'.


**********Comments: Recoded new teacher categories in Ascending order**********

RECODE
  group
  (1=1) (2=2) (5=3) (3=4) INTO grouprc .
VARIABLE LABELS grouprc 'Groups recoded in order for analysis'.
EXECUTE .

Value Labels grouprc 1'No Full cred'
              2'Full Cred istructional services'
              3'FC inst and FC cultural'
              4'FC instr and FC biling'.

**********Comments: Calculating Transition Rate from SABE to CTBS**********
Vector #ct(11).
Vector #sa(11).
Compute #ct(1)=RTC9402g.
Compute #ct(2)=RTC9403g.
Compute #ct(3)=RTC9410g.
Compute #ct(4)=RTC9412g.
Compute #ct(5)=RTC9502g.
Compute #ct(6)=$sysmis.
Compute #ct(7)=RTC9511g.
Compute #ct(8)=RTC9512g.
Compute #ct(9)=RTC9602g.
Compute #ct(10)=RTC9604g.
Compute #ct(11)=RTC9704g.
Compute #sa(1)=RTS9402g.
Compute #sa(2)=RTS9403g.
Compute #sa(3)=RTS9410g.
Compute #sa(4)=RTS9412g.
Compute #sa(5)=RTS9502g.
Compute #sa(6)=RTS9504g.
Compute #sa(7)=RTS9511g.
Compute #sa(8)=RTS9512g.
Compute #sa(9)=RTS9602g.
Compute #sa(10)=RTS9604g.
Compute #sa(11)=RTS9704g.
```

```
Loop #i=1 to 11.
If (#sa(#i)>0)#k=#i.
end loop.
compute #j=0.
Loop #i=11 to #K By -1.
If (#ct(#i)>0)#j=#i.
End loop.

Compute Tgrade=#ct(#j).


COMMENT *** THIS IS Variable calculations.sps.

COMMENT *** CALCULATE PROGRAM CODES FOR NON-LEP.

IF (missing(bprogcde) & profncy = 2) bprogcde = 8 .
IF (missing(bprogcde) & profncy = 3) bprogcde = 9 .

COMMENT *** RECODE ORDER VARIABLE TO LIMIT TO THE SEVEN PROGRAMS.

RECODE
 order1 order2 order3 order4 order5  (2=1)  (4=3)  (6=5)  (8=7)  (10=9)
 (12=11)  (14=13)  (15=13)  .
Value labels
        order1 order2 order3 order4 order5
        1 "TBE - Native Language"
        3 "TLC - Sheltered English"
        5 "Immersion - Native"
        7 "Immersion - Non-Native"
        9 "Immersion - No aide"
        11 "ELD Mainstream"
        13 "Mainstream only".

COMMENT **** Replace READING PROGRAM CODES IF SURVEY DATE PRECEDES FIRST
RECORDED DATE.

if (dy0srvy < datey0 | missing(datey0)) datey0 = dy0srvy.
if (dy1srvy < datey1 | missing(datey1)) datey1 = dy1srvy.
if (dy2srvy < datey2 | missing(datey2)) datey2 = dy2srvy.
if (dz5srvy < datez5 | missing(datez5)) datez5 = dz5srvy.
execute.

COMMENT **** CALCULATE LATEST READING SERVICE CODE.

compute #y0 = max(datey0,datey01).
compute #y1 = max(datey1,datey11).
compute #y2 = max(datey2,datey21).
compute #z5 = max(datez5,datez51).
compute readpgm = $sysmis.
do if mean (#y0,#y1,#z5,#y2) > 0.
        compute #yy = max(#y0,#y1,#z5,#y2).
        if (#yy = #y0) readpgm = 1.
        if (#yy = #y1) readpgm = 2.
```

```
        if (#yy = #z5) readpgm = 3
        if (#yy = #y2) readpgm = 4
end if
variable labels readpgm "Latest Reading Service Code".
value labels readpgm
        1 "Y0 Native Language"
        2 "Y1 Transitional English"
        3 "Z5 Sheltered Immersion"
        4 "Y2 Mainstream English".

COMMENT **** SET IDENTIFY CURRENT PLD LEVEL FOR EACH CURRENT ELD LEVEL.

If(datew5s > 0 & datew0s > 0) pldeld0 = 0.
If(datew6s > 0 & datew1s > 0) pldeld1 = 0.
If(datew7s > 0 & datew2s > 0) pldeld2 = 0.
If(datew8s > 0 & datew3s > 0) pldeld3 = 0.
If(datew9s > 0 & datew4s > 0) pldeld4 = 0.
IF(datew5s <= datew0s) pldeld0 = 1.
IF(datew5s <= datew1s) pldeld1 = 1.
IF(datew5s <= datew2s) pldeld2 = 1.
IF(datew5s <= datew3s) pldeld3 = 1.
IF(datew5s <= datew4s) pldeld4 = 1.
IF(datew6s <= datew0s) pldeld0 = 2.
IF(datew6s <= datew1s) pldeld1 = 2.
IF(datew6s <= datew2s) pldeld2 = 2.
IF(datew6s <= datew3s) pldeld3 = 2.
IF(datew6s <= datew4s) pldeld4 = 2.
IF(datew7s <= datew0s) pldeld0 = 3.
IF(datew7s <= datew1s) pldeld1 = 3.
IF(datew7s <= datew2s) pldeld2 = 3.
IF(datew7s <= datew3s) pldeld3 = 3.
IF(datew7s <= datew4s) pldeld4 = 3.
IF(datew8s <= datew0s) pldeld0 = 4.
IF(datew8s <= datew1s) pldeld1 = 4.
IF(datew8s <= datew2s) pldeld2 = 4.
IF(datew8s <= datew3s) pldeld3 = 4.
IF(datew8s <= datew4s) pldeld4 = 4.
IF(datew9s <= datew0s) pldeld0 = 5.
IF(datew9s <= datew1s) pldeld1 = 5.
IF(datew9s <= datew2s) pldeld2 = 5.
IF(datew9s <= datew3s) pldeld3 = 5.
IF(datew9s <= datew4s) pldeld4 = 5.
variable labels
        pldeld0 "PLD Level at Start of W0"
/       pldeld1 "PLD Level at Start of W1"
/       pldeld2 "PLD Level at Start of W2"
/       pldeld3 "PLD Level at Start of W3"
/       pldeld4 "PLD Level at Start of W4".
value labels pldeld0 pldeld1 pldeld2 pldeld3 pldeld4
        0 "PLD Dates too late"
        1 "PLD Pre-Production"
        2 "PLD Early Production"
        3 "PLD Emergence"
        4 "PLD Intermediate"
```

```
        5 "PLD Advanced"
compute disttime = (enddate - datestrt)/(60*60*24*365.24).
variable labels disttime "Time in SAUSD Schools"
if(rtc9704 > -1 & rts9704 > -1) bothtest = 1.
compute lastrdnc = rts9704.
if(missing(lastrdnc)) lastrdnc = rtc9704.
variable labels lastrdnc "Last reading test NCE (SABE if both)".
value labels lastrdnc 1 "SABE" 2 "CTBS".
RECODE
 rts9704
 (SYSMIS=SYSMIS) (ELSE=1) INTO lasttest.
if(missing(lasttest) & rtc9704 > -1) lasttest =2.
If(datew5s > 0 ) pld9704 = 0.
IF(datew5s <= tst9704) pld9704 = 1.
IF(datew6s <= tst9704) pld9704 = 2.
IF(datew7s <= tst9704) pld9704 = 3.
IF(datew8s <= tst9704) pld9704 = 4.
IF(datew9s <= tst9704) pld9704 = 5.

COMMENT **** CREATE NEW PROGRAM VARIABLE FROM READING PROGRAM DATA.

compute newtbe = $sysmis.
compute newimm = $sysmis.
if(datey0 > 0 | datey1 > 0 | datev0s > 0 | datev1s > 0) newtbe = 1.
if(datev2s > 0 | datev3s >0 | datev4s >0 | datez5 > 0) newimm = 1.
variable labels newtbe "TBE defined by v0, v1, y0 & y1"
        /newimm "Immersion defined by v234 or z5".
if(profcncy < 3) lepfep =1.
variable label lepfep "Language profiency = 1 or 2".
recode newtbe newimm lepfep (sysmis=0).
compute newprgm = 0.
if(lepfep =1) newprgm = 4.
if(newimm = 1) newprgm = 3.
if(newtbe =1) newprgm = 1.
if(newtbe = 1 & newimm =1) newprgm = 2.
DO IF (MISSING(profcncy)).
        RECODE  newprgm (ELSE=SYSMIS) .
END IF .
if(newprgm = 4 & profcncy =2) newprgm = 5.
variable labels newprgm "Program defined by bubble sheet data".
value labels newprgm
        0 "Not LEP/FEP Proficiency"
        1 "TBE = v0, v1, y0 or y1"
        2 "TBE & Immersion"
        3 "Immersion = v234 or z5"
        4 "Mainstream LEP"
        5 "Mainstream FEP".

COMMENT **** CALCULATE ELD LEVEL RATE OF PROGRESS.

count #N = datew0s,datew1s,datew2s,datew3s,datew4s (missing).
compute #N = 5 - #N.
compute #XY = sum(datew0s,2*datew1s,3*datew2s,4*datew3s,5*datew4s)/(60*60*24*365.24).
compute #sx = 0.
```

```
if(datew0s>0) #SX = #SX +1.
if(datew1s>0) #SX = #SX +2.
if(datew2s>0) #SX =#SX +3.
if(datew3s>0) #SX = #SX +4.
if(datew4s>0) #SX = #SX + 5.
compute #SXx =0.
if(datew0s>0) #SXX = #SXX +1.
if(datew1s>0) #SXX = #SXX + 4.
if(datew2s>0) #SXX =#SXX + 9.
if(datew3s>0) #SXX = #SXX + 16.
if(datew4s>0) #SXX = #SXX + 25.
compute #SY = sum(datew0s,datew1s,datew2s,datew3s,datew4s)/(60*60*24*365.24).
compute eldrate = (#N*#XY - #SX*#SY)/(#N*#SXX - #SX*#SX).
variable label eldrate "Rate of ELD growth in Yrs/Lvl".
count #Np = datew5s,datew6s,datew7s,datew8s,datew9s (missing).
compute #Np = 5 - #Np.
compute #XYp = sum(datew5s,2*datew6s,3*datew7s,4*datew8s,5*datew9s)/(60*60*24*365.24).
compute #SXp =0.
if(datew5s>0) #SXp = #SXp +1.
if(datew6s>0) #SXp = #SXp +2.
if(datew7s>0) #SXp =#SXp +3.
if(datew8s>0) #SXp = #SXp +4.
if(datew9s>0) #SXp = #SXp + 5.
compute #SXxp = 0.
if(datew5s>0) #SXXp = #SXXp +1.
if(datew6s>0) #SXXp = #SXXp + 4.
if(datew7s>0) #SXXp =#SXXp + 9.
if(datew8s>0) #SXXp = #SXXp + 16.
if(datew9s>0) #SXXp = #SXXp + 25.
compute #SYp = sum(datew5s,datew6s,datew7s,datew8s,datew9s)/(60*60*24*365.24).
compute pldrate = (#Np*#XYp - #SXp*#SYp)/(#Np*#SXXp - #SXp*#SXp).
variable label pldrate "Rate of PLD growth in Yrs/Lvl".
descriptives eldrate pldrate.

COMMENT *** CREATE ELD9704 -- outdated variable.

if(datew0s <= tst9704) eld9704 = 1.
if(datew1s <= tst9704) eld9704 = 2.
if(datew2s <= tst9704) eld9704 = 3.
if(datew3s <= tst9704) eld9704 = 4.
if(datew4s <= tst9704) eld9704 = 5.
if(rdesdate <= tst9704) eld9704 = 6.
variable labels eld9704 "ELD level at 97 test date".
value labels eld9704
        1 "W0 Pre-Production"
        2 "W1 Early Production"
        3 "W2 Speech Emergence"
        4 "W3 Intermediate Fluency"
        5 "W4 Advanced Fluency"
        6 "Redesignated FEP".
value labels lasttest 1 "SABE" 2 "CTBS".

COMMENT **** CREATE CTBS AND SABE GROWTH RATES
```

```
compute rtc_rate = $sysmis.
compute rts_rate = $sysmis.
Vector #XX(11).
Vector #YY(11).
vector #ZZ(11).
        compute #XX(1) = tst9402/(60*60*24*365.24).
        compute #XX(2) = tst9403/(60*60*24*365.24).
        compute #XX(3) = tst9410/(60*60*24*365.24).
        compute #XX(4) = tst9412/(60*60*24*365.24).
        compute #XX(5) = tst9502/(60*60*24*365.24).
        compute #XX(6) = tst9504/(60*60*24*365.24).
        compute #XX(7) = tst9511/(60*60*24*365.24).
        compute #XX(8) = tst9512/(60*60*24*365.24).
        compute #XX(9) = tst9602/(60*60*24*365.24).
        compute #XX(10) = tst9604/(60*60*24*365.24).
        compute #XX(11) = tst9704/(60*60*24*365.24).
        compute #YY(1) = rtc9402.
        compute #YY(2) = rtc9403.
        compute #YY(3) = rtc9410.
        compute #YY(4) = rtc9412.
        compute #YY(5) = rtc9502.
        compute #YY(6) = $sysmis.
        compute #YY(7) = rtc9511.
        compute #YY(8) = rtc9512.
        compute #YY(9) = rtc9602.
        compute #YY(10) = rtc9604.
        compute #YY(11) = rtc9704.
        compute #ZZ(1) = rts9402.
        compute #ZZ(2) = rts9403.
        compute #ZZ(3) = rts9410.
        compute #ZZ(4) = rts9412.
        compute #ZZ(5) = rts9502.
        compute #ZZ(6) = rts9504.
        compute #ZZ(7) = rts9511.
        compute #ZZ(8) = rts9512.
        compute #ZZ(9) = rts9602.
        compute #ZZ(10) = rts9604.
        compute #ZZ(11) = rts9704.
compute #KS = 0.
compute #KC = 0.
compute #SumXS = 0.
compute #SumXS2 = 0.
compute #SumXC = 0.
compute #SumXC2 = 0.
compute #SumY = 0.
compute #SumZ = 0.
compute #SumXY = 0.
compute #SumXZ = 0.
loop #I = 1 to 11.
        Do If (#YY(#I) > -1).
                compute #KC = #KC + 1.
                compute #SumXC = #SumXC + #XX(#I).
                compute #SumXC2 = #SumXC2 + #XX(#I) * #XX(#I).
                compute #SumY = #SumY + #YY(#I).
```

```
            compute #SumXY = #SumXY + #XX(#I)*#YY(#I).
        End if.
        Do IF (#ZZ(#I) > -1).
            compute #KS = #KS + 1
            compute #SumXS = #SumXS + #XX(#I).
            compute #SumXS2 = #SumXS2 + #XX(#I) * #XX(#I).
            compute #SumZ = #SumZ + #ZZ(#I).
            compute #SumXZ = #SumXZ + #XX(#I)*#ZZ(#I).
        End if.
end loop.
IF(#KS > 1) rts_rate = (#KS*#SumXZ - #SumXS*#SumZ)/(#KS*#SumXS2 - #SumXS*#SumXS).
variable label rts_rate "Rate of SABE growth in NCEs/Yr".
IF(#KC > 1) rtc_rate = (#KC*#SumXY - #SumXC*#SumY)/(#KC*#SumXC2 - #SumXC*#SumXC).
variable label rtc_rate "Rate of CTBS growth in NCEs/Yr".
DESCRIPTIVES
  VARIABLES=rts_rate rtc_rate  /STATISTICS=MEAN STDDEV MIN MAX .


Vector XX(11).
Vector YY(11).
vector ZZ(11).
        compute XX(1) = tst9402/(60*60*24*365.24).
        compute XX(2) = tst9403/(60*60*24*365.24).
        compute XX(3) = tst9410/(60*60*24*365.24).
        compute XX(4) = tst9412/(60*60*24*365.24).
        compute XX(5) = tst9502/(60*60*24*365.24).
        compute XX(6) = tst9504/(60*60*24*365.24).
        compute XX(7) = tst9511/(60*60*24*365.24).
        compute XX(8) = tst9512/(60*60*24*365.24).
        compute XX(9) = tst9602/(60*60*24*365.24).
        compute XX(10) = tst9604/(60*60*24*365.24).
        compute XX(11) = tst9704/(60*60*24*365.24).
        compute YY(1) = rtc9402.
        compute YY(2) = rtc9403.
        compute YY(3) = rtc9410.
        compute YY(4) = rtc9412.
        compute YY(5) = rtc9502.
        compute YY(6) = $sysmis.
        compute YY(7) = rtc9511.
        compute YY(8) = rtc9512.
        compute YY(9) = rtc9602.
        compute YY(10) = rtc9604.
        compute YY(11) = rtc9704.
        compute ZZ(1) = rts9402.
        compute ZZ(2) = rts9403.
        compute ZZ(3) = rts9410.
        compute ZZ(4) = rts9412.
        compute ZZ(5) = rts9502.
        compute ZZ(6) = rts9504.
        compute ZZ(7) = rts9511.
        compute ZZ(8) = rts9512.
        compute ZZ(9) = rts9602.
        compute ZZ(10) = rts9604.
        compute ZZ(11) = rts9704.
```

```
compute KS = 0.
compute KC = 0.
compute SumX = 0.
compute SumY = 0.
compute SumZ = 0.
compute SumXY = 0.
compute SumXZ = 0.
compute SumX2 = 0.
loop I = 1 to 11.
        If (YY(I) > -1) KC = KC + 1.
        IF (ZZ(I) > - 1) KS = KS + 1.
        compute SumX = SumX + XX(I).
        compute SumX2 = SumX2 + (XX(I) * XX(I)).
        If (YY(I) > -1) SumY = SumY + YY(I).
        IF(YY(I) > -1) SumXY = SumXY + XX(I)*YY(I).
        IF(ZZ(I) > -1) SumZ = SumZ + ZZ(I).
        IF(ZZ(I) > -1) SumXZ = SumXZ + XX(I)*ZZ(I).
end loop.
compute rts_rate = (KS*SumXY - SumX*SumY)/(KS*SumX2 - SumX*SumX).
variable label rts_rate "Rate of SABE growth in NCEs/Yr".
compute rtc_rate = (KC*SumXZ - SumX*SumZ)/(KC*SumX2 - SumX*SumX).
variable label rtc_rate "Rate of CTBS growth in NCEs/Yr".
DESCRIPTIVES
  VARIABLES=rts_rate rtc_rate  /STATISTICS=MEAN STDDEV MIN MAX .
IF (KS < 2) rts_rate = $sysmis .
IF (KC < 2) rtc_rate = $sysmis .
EXECUTE .

COMMENT ** THIS IS Variable calculations 2.sps.

COMMENT *** CREATE READING GROWTH RATE, COMBINING CTBS & SABE RATES.

compute readrate = $sysmis.
compute rdratesc = $sysmis.
variable labels
        readrate "Reading achievement rate (SABE if both)"
/       rdratesc "Readrate based on SABE(1) or CTBS(2)".
COMPUTE readrate = rts_rate .
IF (missing(readrate)) readrate = rtc_rate .
IF (rts_rate > -2000) rdratesc = 1 .
IF (missing(rdratesc) & rtc_rate > -2000) rdratesc = 2.
DESCRIPTIVES
  VARIABLES=readrate rdratesc
  /STATISTICS=MEAN STDDEV MIN MAX .
RECODE
  readrate  (Lowest thru -50=SYSMIS)  (50 thru Highest=SYSMIS)  .
EXECUTE .

COMMENT *** COMPUTE READING AND MATH LEVELS FOR 97, 96 & 95.

compute read97 = rts9704.
if (rts9704 > -100) test97 = 1.
do if missing(read97).
        compute read97 = rtc9704.
```

```
        compute test97 = 2.
end if.
compute math97 = mts9704.
if missing(math97) math97 = mtc9704.
execute.
compute read96 = rts9604.
if (rts9604 > -100) test96 = 1.
do if missing(read96).
        compute read96 = rts9602.
        compute test96 = 1.
end if.
do if missing(read96).
        compute read96 = rts9511.
        compute test96 = 1.
end if.
do if missing(read96).
        compute read96 = rts9512.
        compute test96 = 1.
end if.
do if missing(read96).
        compute read96 = rtc9604.
        compute test96 = 2.
end if.
do if missing(read96).
        compute read96 = rtc9602.
        compute test96 = 2.
end if.
do if missing(read96).
        compute read96 = rtc9512.
        compute test96 = 2.
end if.
execute.
compute math96 = mts9604.
if (mts9604 > -100) test96 = 1.
do if missing(math96).
        compute math96 = mts9602.
        compute test96 = 1.
end if.
do if missing(math96).
        compute math96 = mts9511.
        compute test96 = 1.
end if.
do if missing(math96).
        compute math96 = mts9512.
        compute test96 = 1.
end if.
do if missing(math96).
        compute math96 = mtc9604.
        compute test96 = 2.
end if.
do if missing(math96).
        compute math96 = mtc9602.
        compute test96 = 2.
end if.
```

```
do if missing(math96).
        compute math96 = mtc9512.
        compute test96 = 2.
end if.
execute.
compute read95 = rts9504.
if (rts9504 > -100) test95 = 1.
do if missing(read95).
        compute read95 = rts9410.
        compute test95 = 1.
end if.
do if missing(read95).
        compute read95 = rts9502.
        compute test95 = 1.
end if.
do if missing(read95).
        compute read95 = rts9412.
        compute test95 = 1.
end if.
do if missing(read95).
        compute read95 = rtc9410.
        compute test95 = 2.
end if.
do if missing(read95).
        compute read95 = rtc9502.
        compute test95 = 2.
end if.
do if missing(read95).
        compute read95 = rtc9412.
        compute test95 = 2.
end if.
execute.
compute math95 = mts9504.
if (mts9504 > -100) test95 = 1.
do if missing(math95).
        compute math95 = mts9410.
        compute test95 = 1.
end if.
do if missing(math95).
        compute math95 = mts9502.
        compute test95 = 1.
end if.
do if missing(math95).
        compute math95 = mts9412.
        compute test95 = 1.
end if.
do if missing(math95).
        compute math95 = mtc9410.
        compute test95 = 2.
end if.
do if missing(math95).
        compute math95 = mtc9502.
        compute test95 = 2.
end if.
```

```
do if missing(math95).
        compute math95 = mtc9412.
        compute test95 = 2.
end if
variable labels
        read97 "NCE Reading in 97"
/       read96 "NCE Reading in 96"
/       read95 "NCE Reading in 95"
/       math97 "NCE Math in 97"
/       math96 "NCE Math in 96"
/       math95 "NCE Math in 95"
/       test97 "Test language in 97 (SABE if both)"
/       test96 "Test language in 96 (SABE if both)"
/       test95 "Test language in 95 (SABE if both)".
Value labels Test97, Test96, Test95
        1 "SABE"
        2 "CTBS".
execute.

COMMENT *** COMPUTE ELD LEVELS FOR 97, 96 & 95.

compute eld95 = $sysmis.
compute eld96 = $sysmis.
compute eld97 = $sysmis.
compute pld95 = $sysmis.
compute pld96 = $sysmis.
compute pld97 = $sysmis.
compute #D1 = date.mdy(7,1,1997).
compute #D2 = date.mdy(7,1,1996).
compute #D3 = date.mdy(7,1,1995).
if (min(datew0s,datew1s,datew2s,datew3s,datew4s,rdesdate) <= #D1) eld97 = 1.
if (min(datew0s,datew1s,datew2s,datew3s,datew4s,rdesdate) <= #D2) eld96 = 1.
if (min(datew0s,datew1s,datew2s,datew3s,datew4s,rdesdate) <= #D3) eld95 = 1.
if (datew1s <= #D1) eld97 = 2.
if (datew1s <= #D2) eld96 = 2.
if (datew1s <= #D3) eld95 = 2.
if (datew2s <= #D1) eld97 = 3.
if (datew2s <= #D2) eld96 = 3.
if (datew2s <= #D3) eld95 = 3.
if (datew3s <= #D1) eld97 = 4.
if (datew3s <= #D2) eld96 = 4.
if (datew3s <= #D3) eld95 = 4.
if (datew4s <= #D1) eld97 = 5.
if (datew4s <= #D2) eld96 = 5.
if (datew4s <= #D3) eld95 = 5.
if (rdesdate <= #D1) eld97 = 6.
if (rdesdate <= #D2) eld96 = 6.
if (rdesdate <= #D3) eld95 = 6.
if (min(datew5s,datew6s,datew7s,datew8s,datew9s) <= #D1) pld97 = 1.
if (min(datew5s,datew6s,datew7s,datew8s,datew9s) <= #D2) pld96 = 1.
if (min(datew5s,datew6s,datew7s,datew8s,datew9s) <= #D3) pld95 = 1.
if (datew6s <= #D1) pld97 = 2.
if (datew6s <= #D2) pld96 = 2.
if (datew6s <= #D3) pld95 = 2.
```

```
if (datew7s <= #D1) pld97 = 3.
if (datew7s <= #D2) pld96 = 3.
if (datew7s <= #D3) pld95 = 3.
if (datew8s <= #D1) pld97 = 4.
if (datew8s <= #D2) pld96 = 4.
if (datew8s <= #D3) pld95 = 4.
if (datew9s <= #D1) pld97 = 5.
if (datew9s <= #D2) pld96 = 5.
if (datew9s <= #D3) pld95 = 5.
execute.
variable labels
        eld95 "ELD Level in 95"
/       eld96 "ELD Level in 96"
/       eld97 "ELD Level in 97"
/       pld95 "PLD Level in 95"
/       pld96 "PLD Level in 96"
/       pld97 "PLD Level in 97".
value labels
        eld95 eld96 eld97 pld95 pld96 pld97
        1 "Pre-Production"
        2 "Early Production"
        3 "Speech Emergence"
        4 "Intermediate Fluency"
        5 "Advanced Fluency"
        6 "Redesignated".
EXECUTE.

COMMENT *** ADJUST DATEX0 THROUGH DATEX9 FOR SURVEY DATA.

if (dx0srvy < datex0 | missing(datex0)) datex0 = dx0srvy.
if (dx1srvy < datex1 | missing(datex1)) datex1 = dx1srvy.
if (dx2srvy < datex2 | missing(datex2)) datex2 = dx2srvy.
if (dx3srvy < datex3 | missing(datex3)) datex3 = dx3srvy.
if (dx4srvy < datex4 | missing(datex4)) datex4 = dx4srvy.
if (dx5srvy < datex5 | missing(datex5)) datex5 = dx5srvy.
if (dx6srvy < datex6 | missing(datex6)) datex6 = dx6srvy.
if (dx7srvy < datex7 | missing(datex7)) datex7 = dx7srvy.
if (dx8srvy < datex8 | missing(datex8)) datex8 = dx8srvy.
if (dx9srvy < datex9 | missing(datex9)) datex9 = dx9srvy.

COMMENT *** COMPUTE READING LEVEL 97, 96, 95.

compute #D1 = date.mdy(7,1,1997).
compute #D2 = date.mdy(7,1,1996).
compute #D3 = date.mdy(7,1,1995).
if
(min(datex0,datex01,datex1,datex11,datex2,datex21,datex3,datex31,datex4,datex5,datex6,datex7,datex8,d
atex9) <= #D1) rdlvl97 = 0.
if
(min(datex0,datex01,datex1,datex11,datex2,datex21,datex3,datex31,datex4,datex5,datex6,datex7,datex8,d
atex9) <= #D2) rdlvl96 = 0.
if
(min(datex0,datex01,datex1,datex11,datex2,datex21,datex3,datex31,datex4,datex5,datex6,datex7,datex8,d
atex9) <= #D3) rdlvl95 = 0.
```

```
if (max(datex01,datex1) <= #D1 & datex1 > 0) rdlvl97 = 1.
if (max(datex01,datex1) <= #D2 & datex1 > 0) rdlvl96 = 1.
if (max(datex01,datex1) <= #D3 & datex1 > 0) rdlvl95 = 1.
if (max(datex11,datex2) <= #D1 & datex2 > 0) rdlvl97 = 2.
if (max(datex11,datex2) <= #D2 & datex2 > 0) rdlvl96 = 2.
if (max(datex11,datex2) <= #D3 & datex2 > 0) rdlvl95 = 2.
if (max(datex21,datex3) <= #D1 & datex3 > 0) rdlvl97 = 3.
if (max(datex21,datex3) <= #D2 & datex3 > 0) rdlvl96 = 3.
if (max(datex21,datex3) <= #D3 & datex3 > 0) rdlvl95 = 3.
if (max(datex31,datex4) <= #D1 & datex4 > 0) rdlvl97 = 4.
if (max(datex31,datex4) <= #D2 & datex4 > 0) rdlvl96 = 4.
if (max(datex31,datex4) <= #D3 & datex4 > 0) rdlvl95 = 4.
if (datex5 <= #D1) rdlvl97 = 5.
if (datex5 <= #D2) rdlvl96 = 5.
if (datex5 <= #D3) rdlvl95 = 5.
if (datex6 <= #D1) rdlvl97 = 6.
if (datex6 <= #D2) rdlvl96 = 6.
if (datex6 <= #D3) rdlvl95 = 6.
if (datex7 <= #D1) rdlvl97 = 7.
if (datex7 <= #D2) rdlvl96 = 7.
if (datex7 <= #D3) rdlvl95 = 7.
if (datex8 <= #D1) rdlvl97 = 8.
if (datex8 <= #D2) rdlvl96 = 8.
if (datex8 <= #D3) rdlvl95 = 8.
if (datex9 <= #D1) rdlvl97 = 9.
if (datex9 <= #D2) rdlvl96 = 9.
if (datex9 <= #D3) rdlvl95 = 9.
variable labels
        rdlvl97 "97 Reading Level"
/       rdlvl96 "96 Reading Level"
/       rdlvl95 "95 Reading Level".
value labels
        rdlvl97 rdlvl96 rdlvl95
        0 "X0 K/Illiterate"
        1 "X1 Grade1"
        2 "X2 Grade2"
        3 "X3 Grade3"
        4 "X4 Grade4"
        5 "X5 Grade5"
        6 "X6 Grade6"
        7 "X7 Grade7"
        8 "X8 Grade8"
        9 "X9 Grade9".
execute.

COMMENT ** UPDATE SUBJECT PROGRAMS FROM SURVEY DATA.

if (dy3srvy < datey3 | missing(datey3)) datey3 = dy3srvy.
if (dy4srvy < datey4 | missing(datey4)) datey4 = dy4srvy.
if (dy5srvy < datey5 | missing(datey5)) datey5 = dy5srvy.
if (dy6srvy < datey6 | missing(datey6)) datey6 = dy6srvy.
if (dy7srvy < datey7 | missing(datey7)) datey7 = dy7srvy.
if (dy8srvy < datey8 | missing(datey8)) datey8 = dy8srvy.
if (dy9srvy < datey9 | missing(datey9)) datey9 = dy9srvy.
```

```
if (dz1srvy < datez1 | missing(datez1)) datez1 = dz1srvy.
if (dz2srvy < datez2 | missing(datez2)) datez2 = dz2srvy.
if (dz3srvy < datez3 | missing(datez3)) datez3 = dz3srvy.
if (dz4srvy < datez4 | missing(datez4)) datez4 = dz4srvy.

COMMENT *** COMPUTE SUBJECT SERVICE LEVELS FOR 97, 96 AND 95.

compute #D1 = date.mdy(7,1,1997).
compute #D2 = date.mdy(7,1,1996).
compute #D3 = date.mdy(7,1,1995).
if (min(datey3,datey31,datey4,datey41,datey5,datey51) <= #D1) mthlvl97 = 1.
if (min(datey3,datey31,datey4,datey41,datey5,datey51) <= #D2) mthlvl96 = 1.
if (min(datey3,datey31,datey4,datey41,datey5,datey51) <= #D3) mthlvl95 = 1.
if (max(datey31,datey4) <= #D1 & datey4 > 0) mthlvl97 = 2.
if (max(datey31,datey4) <= #D2 & datey4 > 0) mthlvl96 = 2.
if (max(datey31,datey4) <= #D3 & datey4 > 0) mthlvl95 = 2.
if (max(datey41,datey5) <= #D1 & datey5 > 0) mthlvl97 = 3.
if (max(datey41,datey5) <= #D2 & datey5 > 0) mthlvl96 = 3.
if (max(datey41,datey5) <= #D3 & datey5 > 0) mthlvl95 = 3.
compute #D1 = date.mdy(7,1,1997).
compute #D2 = date.mdy(7,1,1996).
compute #D3 = date.mdy(7,1,1995).
if (min(datey6,datey61,datey7,datey71,datey8,datey81) <= #D1) scilvl97 = 1.
if (min(datey6,datey61,datey7,datey71,datey8,datey81) <= #D2) scilvl96 = 1.
if (min(datey6,datey61,datey7,datey71,datey8,datey81) <= #D3) scilvl95 = 1.
if (max(datey61,datey7) <= #D1 & datey7 > 0) scilvl97 = 2.
if (max(datey61,datey7) <= #D2 & datey7 > 0) scilvl96 = 2.
if (max(datey61,datey7) <= #D3 & datey7 > 0) scilvl95 = 2.
if (max(datey71,datey8) <= #D1 & datey8 > 0) scilvl97 = 3.
if (max(datey71,datey8) <= #D2 & datey8 > 0) scilvl96 = 3.
if (max(datey71,datey8) <= #D3 & datey8 > 0) scilvl95 = 3.
compute #D1 = date.mdy(7,1,1997).
compute #D2 = date.mdy(7,1,1996).
compute #D3 = date.mdy(7,1,1995).
if (min(datey9,datey91,datez0,datez01,datez1,datez11) <= #D1) soclvl97 = 1.
if (min(datey9,datey91,datez0,datez01,datez1,datez11) <= #D2) soclvl96 = 1.
if (min(datey9,datey91,datez0,datez01,datez1,datez11) <= #D3) soclvl95 = 1.
if (max(datey91,datez0) <= #D1 & datez0 > 0) soclvl97 = 2.
if (max(datey91,datez0) <= #D2 & datez0 > 0) soclvl96 = 2.
if (max(datey91,datez0) <= #D3 & datez0 > 0) soclvl95 = 2.
if (max(datez01,datez1) <= #D1 & datez1 > 0) soclvl97 = 3.
if (max(datez01,datez1) <= #D2 & datez1 > 0) soclvl96 = 3.
if (max(datez01,datez1) <= #D3 & datez1 > 0) soclvl95 = 3.
compute #D1 = date.mdy(7,1,1997).
compute #D2 = date.mdy(7,1,1996).
compute #D3 = date.mdy(7,1,1995).
if (min(datez2,datez21,datez3,datez31,datez4,datez41) <= #D1) inglvl97 = 1.
if (min(datez2,datez21,datez3,datez31,datez4,datez41) <= #D2) inglvl96 = 1.
if (min(datez2,datez21,datez3,datez31,datez4,datez41) <= #D3) inglvl95 = 1.
if (max(datez21,datez3) <= #D1 & datez3 > 0) inglvl97 = 2.
if (max(datez21,datez3) <= #D2 & datez3 > 0) inglvl96 = 2.
if (max(datez21,datez3) <= #D3 & datez3 > 0) inglvl95 = 2.
if (max(datez31,datez4) <= #D1 & datez4 > 0) inglvl97 = 3.
if (max(datez31,datez4) <= #D2 & datez4 > 0) inglvl96 = 3.
```

```
if (max(datez31,datez4) <= #D3 & datez4 > 0) lnglvl95 = 3.
variable labels
        mthlvl97 "97 Math Level"
/       mthlvl96 "96 Math Level"
/       mthlvl95 "95 Math Level"
/       scilvl97 "97 Science Level"
/       scilvl96 "96 Science Level"
/       scilvl95 "95 Science Level"
/       soclvl97 "97 SocStudies Level"
/       soclvl96 "96 SocStudies Level"
/       soclvl95 "95 SocStudies Level"
/       lnglvl97 "97 LangArts Level"
/       lnglvl96 "96 LangArts Level"
/       lnglvl95 "95 LangArts Level".
value labels
        mthlvl97 mthlvl96 mthlvl95
        scilvl97 scilvl96 scilvl95
        soclvl97 soclvl96 soclvl95
        lnglvl97 lnglvl96 lnglvl95
        1 "Native"
        2 "Sheltered"
        3 "Mainstream".
execute.

compute #D1 = date.mdy(7,1,1997).
compute #D2 = date.mdy(7,1,1996).
compute #D3 = date.mdy(7,1,1995).
if (datey0 <= #D1) Native97 = 1.
if (datey0 <= #D2) Native96 = 1.
if (datey0 <= #D3) Native95 = 1.
if (datey1 <= #D1) Trans97 = 1.
if (datey1 <= #D2) Trans96 = 1.
if (datey1 <= #D3) Trans95 = 1.
if (datey2 <= #D1) Main97 = 1.
if (datey2 <= #D2) Main96 = 1.
if (datey2 <= #D3) Main95 = 1.
if (datez5 <= #D1) Immer97 = 1.
if (datez5 <= #D2) Immer96 = 1.
if (datez5 <= #D3) Immer95 = 1.
variable labels
        Native97 "97 in Native Reading"
/       Native96 "96 in Native Reading"
/       Native95 "95 in Native Reading"
/       Trans97 "97 in Transition Reading"
/       Trans96 "96 in Transition Reading"
/       Trans95 "95 in Transition Reading"
/       Main97 "97 in Mainstream Reading"
/       Main96 "96 in Mainstream Reading"
/       Main95 "95 in Mainstream Reading"
/       Immer97 "97 in Immersion Reading"
/       Immer96 "96 in Immersion Reading"
/       Immer95 "95 in Immersion Reading".
value labels
        Native97 Native96 Native95
```

```
        Trans97 Trans96 Trans95
        Main97 Main96 Main95
        Immer97 Immer96 Immer95
        0 "No"
        1 "Yes".

execute.


If (mean(datey0,datey01) > 0) Nativ1st = 0.
If (Max(datey0,datey01) < Max(datey1,datey11,datey2,datey21,datez5,datez51)) Nativ1st = 1.
if (mean(datey1,datey11) > 0) Trans1st = 0.
If (max(datey1,datey11) < max(datey0,datey91,datey2,datey21,datez5,datez51)) Trans1st = 1.
if (mean(datey2,datey21) > 0) Main1st = 0.
if (max(datey2,datey21) < max(datey0,datey01,datey1,datey11,datez5,datez51)) Main1st = 1.
if (mean(datez5,datez51) > 0) Immer1st = 0.
if (max(datez5,datez51) < max(datey0,datey01,datey1,datey11,datey2,datey21)) Immer1st = 1.
variable labels
        Nativ1st "Native reading is first"
/       Trans1st "Transition reading is first"
/       Main1st "Mainstream reading is first"
/       Immer1st "Immersion reading is first".
value labels
        Nativ1st Trans1st Main1st Immer1st 0 "No" 1 "Yes".
if (mean(datey0,datey01) > 0 & missing(native97)) native97=0.
if (mean(datey0,datey01) > 0 & missing(native96)) native96=0.
if (mean(datey0,datey01) > 0 & missing(native95)) native95=0.
if (mean(datey1,datey11) > 0 & missing(trans97)) trans97=0.
if (mean(datey1,datey11) > 0 & missing(trans96)) trans96=0.
if (mean(datey1,datey11) > 0 & missing(trans95)) trans95=0.
if (mean(datey2,datey21) > 0 & missing(main97)) main97=0.
if (mean(datey2,datey21) > 0 & missing(main96)) main96=0.
if (mean(datey2,datey21) > 0 & missing(main95)) main95=0.
if (mean(datez5,datez51) > 0 & missing(immer97)) immer97=0.
if (mean(datez5,datez51) > 0 & missing(immer96)) immer96=0.
if (mean(datez5,datez51) > 0 & missing(immer95)) immer95=0.

execute.


compute #D1 = date.mdy(7,1,1997).
compute #D2 = date.mdy(7,1,1996).
compute #D3 = date.mdy(7,1,1995).
if (min(datey0,datey01,datey1,datey11,datey2,datey21,datez5,datez51) <= #D1) rdpgm97 = 5.
if (min(datey0,datey01,datey1,datey11,datey2,datey21,datez5,datez51) <= #D2) rdpgm96 = 5.
if (min(datey0,datey01,datey1,datey11,datey2,datey21,datez5,datez51) <= #D3) rdpgm95 = 5.
if (max(datez5,datez51) <= #D1) rdpgm97 = 4.
if (max(datez5,datez51) <= #D2) rdpgm96 = 4.
if (max(datez5,datez51) <= #D3) rdpgm95 = 4.
if (max(datey2,datey21) <= #D1) rdpgm97 = 2.
if (max(datey2,datey21) <= #D2) rdpgm96 = 2.
if (max(datey2,datey21) <= #D3) rdpgm95 = 2.
if (max(datey0,datey01) <= #D1) rdpgm97 = 1.
```

```
if (max(datey0,datey01) <= #D2) rdpgm96 = 1.
if (max(datey0,datey01) <= #D3) rdpgm95 = 1.
if (max(datey1,datey11,datey0,datey01) <= #D1 & max(datez5,datez51) >= #D1) rdpgm97 = 3.
if (max(datey1,datey11,datey0,datey01) <= #D2 & max(datez5,datez51) >= #D2) rdpgm96 = 3.
if (max(datey1,datey11,datey0,datey01) <= #D3 & max(datez5,datez51) >= #D3) rdpgm95 = 3.
value labels
        rdpgm97 rdpgm96 rdpgm95
        1 "Native"
        2 "Transitional"
        3 "TBE & Immersion"
        4 "Immersion"
        5 "Mainstream".
execute.


compute grade97 = rts9704g.
if missing(grade97) grade97 = mtc9704g.
compute grade96 = rts9604g.
if missing(grade96) grade96 = rts9602g.
if missing(grade96) grade96 = rts9511g.
if missing(grade96) grade96 = rts9512g.
if missing(grade96) grade96 = mtc9604g.
if missing(grade96) grade96 = mtc9602g.
if missing(grade96) grade96 = mtc9512g.
compute grade95 = rts9504g.
if missing(grade95) grade95 = rts9410g.
if missing(grade95) grade95 = rts9502g.
if missing(grade95) grade95 = rts9412g.
if missing(grade95) grade95 = mtc9410g.
if missing(grade95) grade95 = mtc9502g.
if missing(grade95) grade95 = mtc9412g.
execute.

COMMENT *** FIX V CODES FOR SURVEY DATA.

IF(dv0srvy < datev0s | missing(datev0s)) datev0s = dv0srvy.
IF(dv1srvy < datev1s | missing(datev1s)) datev1s = dv1srvy.
IF(dv2srvy < datev2s | missing(datev2s)) datev2s = dv2srvy.
IF(dv3srvy < datev3s | missing(datev3s)) datev3s = dv3srvy.
IF(dv4srvy < datev4s | missing(datev4s)) datev4s = dv4srvy.
IF(dv5srvy < datev5s | missing(datev5s)) datev5s = dv5srvy.
IF(dv6srvy < datev6s | missing(datev6s)) datev6s = dv6srvy.

COMMENT *** CALCULATE V-CODE PROGRAM ENROLLMENT 97, 96, 95.

compute biling97 = $sysmis.
compute biling96 = $sysmis.
compute biling95 = $sysmis.
compute #D1 = date.mdy(7,1,1997).
compute #D2 = date.mdy(7,1,1996).
compute #D3 = date.mdy(7,1,1995).
Vector #v(15).
Vector #P(15).
compute #v(1) = datev0s.
```

```
        if (datev0s > 0) #P(1) = 0.
compute #v(2) = datev01s.
        if (datev01s > 0) #P(2) = 0.
compute #v(3) = datev1s.
        if (datev1s > 0) #P(3) = 1.
compute #v(4) = datev11s.
        if (datev11s > 0) #P(4) = 1.
compute #v(5) = datev2s.
        if (datev2s > 0) #P(5) = 2.
compute #v(6) = datev21s.
        if (datev21s > 0) #P(6) = 2.
compute #v(7) = datev3s.
        if (datev3s > 0) #P(7) = 3.
compute #v(8) = datev31s.
        if (datev31s > 0) #P(8) = 3.
compute #v(9) = datev4s.
        if (datev4s > 0) #P(9) = 4.
compute #v(10) = datev41s.
        if (datev41s > 0) #P(10) = 4.
compute #v(11) = datev5s.
        if (datev5s > 0) #P(11) = 5.
compute #v(12) = datev51s.
        if (datev51s > 0) #P(12) = 5.
compute #v(13) = datev6s.
        if (datev6s > 0) #P(13) = 6.
compute #v(14) = datev61s.
        if (datev61s > 0) #P(14) = 6.
compute #v(15) = datev62s.
        if (datev62s > 0) #P(15) = 6.
loop #I = 1 to 15.
loop #j = 15 to #I by -1.
        if (missing(#v(#i))) #v(#i) = 10E100.
        do if #v(#j) < #v(#i) .
                compute #hold = #v(#j).
                compute #v(#j) = #v(#i).
                compute #v(#i) = #hold.
                compute #hold  = #P(#j).
                compute #P(#j) = #P(#i).
                compute #P(#i) = #hold.
        end if.
end loop.
end loop.
loop #I = 1 to 15.
        if (#v(#i) < #D1) biling97 = #P(#I).
        if (#v(#i) < #D2) biling96 = #P(#I).
        if (#v(#i) < #D3) biling95 = #P(#I).
end loop.
Variable labels
        biling97 "V-Code Program in 97"
/       biling96 "V-Code Program in 96"
/       biling95 "V-Code Program in 95".
value labels
        biling97 biling96 biling95
        0 "TBE - Native"
```

```
        1 "TLC - Transitional"
        2 "Immersion - Native"
        3 "Immersion - Other"
        4 "Immersion only"
        5 "Mainstream + ELD"
        6 "Mainstream only"
        7 "FEP Mainstream"
        8 "Eng Only Mainstream".
execute.


variable labels
        mnthw0w1 "Months ELD Pre-Production to Early Production"
/       mnthw0w2 "Months ELD Pre-Production to Emergence"
/       mnthw0w3 "Months ELD Pre-Production to Intermediate"
/       mnthw0w4 "Months ELD Pre-Production to Advanced"
/       mnthw0rd "Months ELD Pre-Production to Redesignated"
/       mnthw1w2 "Months ELD Early to Emergence"
/       mnthw1w3 "Months ELD Early to Intermediate"
/       mnthw1w4 "Months ELD Early to Advanced"
/       mnthw1rd "Months ELD Early to Redesignated"
/       mnthw2w3 "Months ELD Emergence to Intermediate"
/       mnthw2w4 "Months ELD Emergence to Advanced"
/       mnthw2rd "Months ELD Emergence to Redesignated"
/       mnthw3w4 "Months ELD Intermediate to Advanced"
/       mnthw3rd "Months ELD Intermediate to Redesignated"
/       mnthw4rd "Months ELD Advanced to Redesignated".

Variable lables
        rdpgm97 "Reading Services in 97"
/       rdpgm96 "Reading Services in 96"
/       rdpgm95 "Reading Services in 95".



compute #yr = trunc(thdate/10000).
compute #mo = trunc(thdate/100) - 100*#yr.
compute #da = thdate - 10000*#yr - 100*#mo.
compute texper = (enddate - date.mdy(#mo,#da,#yr))/(60*60*24*365.24).
compute #yr = trunc(tbdate/10000).
compute #mo = trunc(tbdate/100) - 100*#yr.
compute #da = tbdate - 100*#mo - 10000*#yr.
compute t_age = (enddate - date.mdy(#mo,#da,#yr))/(60*60*24*365.24).
variable labels texper "Teacher experience in years"
/t_age "Teacher age in years".
execute.

if (disttime >= 5) elemtrns = elemtrns/5.
if (disttime >= 4 & disttime< 5) elemtrns = elemtrns/4.
if (disttime >= 3 & disttime < 4) elemtrns = elemtrns/3.
if (disttime >= 2 & disttime < 3) elemtrns = elemtrns/2.
if (disttime >= 5) midltrns = midltrns/5.
if (disttime >= 4 & disttime< 5) midltrns = midltrns/4.
if (disttime >= 3 & disttime < 4) midltrns = midltrns/3.
```

```
if (disttime >= 2 & disttime < 3) midltrns = midltrns/2.
if (disttime >= 5) sectrns = sectrns/5.
if (disttime >= 4 & disttime< 5) sectrns = sectrns/4.
if (disttime >= 3 & disttime < 4) sectrns = sectrns/3.
if (disttime >= 2 & disttime < 3) sectrns = sectrns/2.
execute.
variable labels
        elemtrns "Elementary Transiency (schls/year)"
/       midltrns "Middle Schl Transiency (schls/year)"
/       sectrns "Secondary Schl Transiency (schls/year)".

comment **** Calculate days absent for all age groups

compute abs_days = $sysmis.
compute abs_days = ab_d_el.
if (missing(abs_days)) abs_days = ab_pmshs/7.
variable label abs_days "Number of days ethnic absent - all students".
execute.
```

APPENDIX B

Variable Description and Computation

Variables Created for Analysis

I- Student Characteristics/Intakes

1- Poverty indicator: Poverty status of students was based on whether students were on Free/Reduced Lunch Services. Students who did not receive any Free/Reduced Lunch services were coded as '0' =Non-poverty. Those who did received a '1'=Poverty.

2- Handicap was coded as '1' for students who had no handicap code and 2 for students who had any handicap code.

3- The Neighborhood Social Economic characteristics was computed from the students' residential zip codes. Students with the same zip codes were grouped together under one code. Zip codes were coded as '1'=92701, '2'=92702, '3'=92703, '4'=92704, '5'=92705, '6'=92706, '7'=92707, '8'=All others.

4- Length of time spent in the district was computed by subtracting the date students enrolled in the school district from the project end date (5/1/97) .

5- Overage for grade placement indicator was computed by subtracting student's age from a predetermined maximum expected age for the student's current grade level which was estimated by using 5 years as the appropriate age for students in Kindergarten. An overage value less than -1 and greater than 6 was set to missing.

6- Gender was coded as '1' for males and '2' for females.

7- Ethnicity: SAUSD served various ethnic groups. In cases were small number of students belonged to certain ethnic groups an 'Other' category was created to combine these groups. Ethnicity was, thus recoded as, '1'= Hispanic, '2'=Asian , '3'=White, '4'=All other.

8- Attendance: Attendance information on each student was recoded into three main categories, Excused absences, Unaccounted/Unexcused Absences and Tardiness. The Excused absence category included excuses such as illness, field trip and school business. The unaccounted absence included, unexcused and unverified absences and truancies. The tardiness category included both excused and unexcused tardiness. The number of occurrences for each category for academic year 1997 was calculated separately for elementary students and combined for middle and high school students since attendance at the elementary level was reported based on 'all day', while at the middle and high school levels attendance was reported by 'period' and 'days'. The all day absences for middle and high schools students were converted to periods (1 all day absence = 7 periods).

9- Program Movements This tracks the movement of LEP students between various bilingual programs. This was determined by counting the number of times students were assigned different bilingual program codes in a little less than three years.

II- School Context

1- School Cycle: SAUSD has both traditional and round year schools. Schools falling under each type were grouped together '0'=traditional and '1'=year round.

2- School Track: Tracks for year round schools were coded as '1'=A, '2'=B, '3'=C, '4'=D.

3- School: Different tracks of the same school were grouped under one code.

4- Class Size: This variable was determined by counting the number of students that had the same school code, grade level and teacher name.

5- Transiency Rate: The number of times students enrolled in a different school at each of the elementary, middle and high school levels were counted for school years 1993 through 1997. The number of transiency for each school level was then added for each student to get a total transiency estimate. The total number of transiency then was readjusted by subtracting the number of times students moved between school levels (movement between elementary, middle school and high school levels) and by dividing the result by the number of years a student has been in the school district. The number of years a student has been in the district was computed by subtracting the earliest date students enrolled in a SAUSD school during the past five years from the project end date (5/1/97).

6- Teacher education: Teacher education was recoded as '1'=AA, '2'=BA', '3'='Credential', '4'=Master', '5'=Doctorate. Teachers who did not report any education level, but reported having credentials were recoded as having a BA.

7- Teacher credentials and experience: Teachers type of trainings were categorized into bilingual trainings (e.g. BCC and LDS), cultural sensitivity trainings (e.g. CLAD), other instructional trainings (e.g. Standard elementary, standard secondary, Multiple subject and single subject) and non instructional trainings (e.g. Administrative Service). Teachers' types of credentials were categorized into Fully credentialed (e.g. Life, Clear) and Not Fully credentialed (e.g. Partial Fulfillment, Emergency and Provisional). The training categories and the credential categories were combined together to classify teachers into the following groups: '1'=No Full credentials, '2'=Full credentials in instructional training only, '3'=Full credentials in instructional and cultural sensitivity training only, '4' = Full credentials in instructional and bilingual training only'.

III- Language programs

1- Language program assignments: Student Language program assignments for each year were determined by the bilingual program codes on the annual survey (bubble sheet). However, since these codes combine both the type of bilingual programs and teacher credentials, language program assignments were determined from these codes as well as the type of services students were getting over a period of approximately three years.

2- Program Service: The current program service assignments were determined from the program service codes on the 1997 annual survey (bubble sheet).

IV- Outcomes

1 - Student Redesignation Date: This information was obtained from the annual survey (bubble sheet). In cases where the students' redesignation dates were missing and their monitoring dates were not available, we considered the earliest monitoring dates as the redesignation dates.

2- English language development level: In the process of calculating ELD rate, the start and end dates of students' ELD level assignments were recoded since the dates on which students' ELD levels ended did not correspond to the dates on which their next ELD levels started. Thus the earliest reported starting date for the lowest ELD level achieved by a student was assigned to that student. This was based on the assumption that language proficiency does not diminish over time. Each ELD level assignment starting date for a student was then compared to all lower ELD level assignment dates . An assigned ELD level starting date was kept only if it was more recent than the assignment dates corresponding to all lower ELD levels. Otherwise, it was recoded as missing. In computing the number of months it took students to move through different ELD levels, the end date of and ELD level was always assumed to coincide with the beginning of the next higher ELD level.

a- The **number of months elapsed between various ELD level classifications** for a student was computed by subtracting the date on which a student was assigned an ELD level from the date on which the same student was assigned the next higher ELD level. Since there are five different ELD levels (W0 through W4) and a redesignation date, fifteen different possibilities exist for calculating the time between different ELD level classifications. For example, if an LEP student entered SAUSD in 1994 and was assigned ELD level W0 and then was assigned ELD level W1 in 1995, ELD level W2 in 1996 and ELD level W4 in 1997, the number of months elapsed between each classification was computed by subtracting (i) the assignment date of W0 from each of W1, W2 and W4 (ii) the assignment date of W1 from each of W2 and W4 (iii) the assignment date of W2 from W4 (iv) the assignment date of W4 from the redesignation date if the student was redisgnated to FEP. Since the student was not assigned to ELD level W3 the time variable (number of months from W3 to W4) was set to missing. Although students should move through one ELD level at a time there were cases in the data base where some ELD levels were skipped. The time variables related to the skipped ELD levels were set to missing. For students who did not leave their most recent assigned ELD level, the date of assignment was subtracted from the project end date (5/1/97) in order to get

an estimate of the number of months they have been at that level Such cases are known as censored cases.

b- A variable called **status** was created for each ELD level W0 through W4 to keep track of the censored and non-censored cases. Any student who left an ELD level or was redesignated was given a status = 1 for that ELD level indicating actual movement. Students who stayed in their ELD level were assigned a status = 0 for that ELD level indicating a censored case. For example, a student who was assigned to ELD level W1 and then later was assigned to ELD level W3 was given a status =1 for the W1 level. The status for W2 was not computed (even though a student had to be assigned ELD level W2 before being assigned ELD level W3) because of the missing time variable corresponding to W2.

The combination of the status variable for each ELD level and the number of months elapsed between ELD level classifications were used in the survival analysis to estimate the length of time it took students to move through various ELD levels taking into account the censored cases in order to achieve more accurate estimates.

3- Primary Language Development levels: The above procedure was also used for the Primary Language Development levels. Since there is no PLD redesignation date the exit date of the highest PLD level was used instead to calculate the number of months a student has been at that level.

4- Academic Progress: The academic achievement rate was calculated for students with testing scores from more than one academic year. By using a linear regression method the slope of the regression line was determined and used to estimate academic growth and student progress in Math and Reading. Since students took the standardized tests at different times within the same academic year, the variables had to be rearranged to combine all results of tests taken within each academic year (94, 95, 96, 97). The majority of the students either took CTBS or SABE. For the few who took both tests, the SABE scores where the ones used in the analysis.

5- Last test: This variable was created to correct for the effect of conducting CTBS in English and SABE in Spanish. Students who took SABE achieved - on average - 30 points higher on NCE scores than students who took CTBS due to the language factor and not students' knowledge. This variable was used to control for the score difference and was coded as 1 for students who took SABE and 2 for students who took CTBS.

6- Transition Rate: This is an estimate of the percent of students transitioning from taking the standardized test in Spanish (SABE) to English (CTBS) for school years 1994 through 1997. This is determined by using the last date a student took SABE and the earliest Date that student took CTBS provided the student has not taken SABE after taking the CTBS.

APPENDIX C

District and School Interviews

Santa Ana Unified School District
Language Development Evaluation Project

School Site Interview Protocol

1. Could you tell me about the various Limited English Proficient language groups at this school?

2. What sort of language development programs do you have here?

3. How do the staff at this school feel about the best way of working with Limited English Proficient students? Do community leaders seem to agree with the staff view? How about students and families?

4. I have here the form used to report on the status of Limited English Proficient students – as I understand it, it lists the students level of language facility, the programs they are assigned to, and the kinds of language development services they receive. Are you familiar with this form? Have you used it yourself? Could you walk me through the process of how this form gets used for individual students at this school?

5. If a new student comes to your school, how is it decided whether a green sheet should be filled out on him/her? What procedures are used to generate a form for the new student?

6. How do staff responsible for completing the form judge the students language attainment level?

7. How do the staff decide what services to provide for an incoming student?

8. How often are students re-evaluated to check on their language development? What happens when the re-evaluation takes place?

9. Are you familiar with the district's data management system for tracking Limited English Proficient students? Have you seen reports based on this data system? Do these reports seem to be accurate and timely? Did these reports have information that was valuable to you? Were these reports used in planning or decision making at your school site?

10. What are your own personal feelings about Santa Ana's response to the Limited English Proficient students which you serve?

School and Central Office Interviews

Central Office Interviews	School Interviews
Assistant Superintendent, Support Services	Pio Pico Elementary
Director, Special Education	Roosevelt Elementary
Coordinator, Special Education	Taft Elementary
Director, ELD/Bilingual Programs	Jefferson Elementary
Coordinator, Southeast Asian/Pacific Islander Student Programs	Heninger Elementary
Coordinator, Migrant Education	Sierra Intermediate
Coordinator, Student Achievement Programs	Spurgeon Intermediate
Deputy Administrator, Elementary Division	Willard Intermediate
Director, Student Success Team	Valley High School
Bilingual Resource Teacher	Century High School
Director, Discipline Services	
Program Analyst, Information Technology Center	
Director, Information Technology Center	

APPENDIX D

LEP Student Program Services: Annual Survey

LEP STUDENT PROGRAM SERVICES
Santa Ana Unified School District

NAME: TEACHER:
DOB: YIS: NATIONAL ORIGIN:
LANG CODE: DATE ARRIVED IN USA:

OFFICE USE ONLY	SCHOOL NUMBER			SCHOOL YEAR		STUDENT ID #					
REDESIGNATED TO FEP											
① Tier I											
② Tier II											
③ Tier III											
④ Monitor, Year 1											
⑤ Monitor, Year 2											
⑥ Monitor, Year 3											
BASE PROGRAM			TRACK								

TEACHER'S SIGNATURE: _____

PROGRAM CODES: *(bubble only one)*

- ① TBE/LITERACY/EASE - TRANSITIONAL BILINGUAL EDUCATION (NATIVE LANGUAGE INSTRUCTION)
- ② TBE/TLC - TRANSITIONAL LANGUAGE CLASS (TRANSITIONAL/SHELTERED ENGLISH)
- ③ ELD/IMMERSION/SHELTERED - WITH A BILINGUAL INSTRUCTIONAL ASSISTANT IN NATIVE LANGUAGE
- ④ ELD/IMMERSION/SHELTERED - WITH A BILINGUAL INSTRUCTIONAL ASSISTANT IN OTHER LANGUAGE
- ⑤ ELD/IMMERSION/SHELTERED - NO BILINGUAL INSTRUCTIONAL ASSISTANT
- ⑥ ELD AND MAINSTREAM INSTRUCTION
- ⑦ MAINSTREAM ONLY

LANGUAGE DEVELOPMENT CODES: *(bubble one in each group)*

English Language Development

- ① LEP PRG: ELD 1 (Pre-Production)
- ② LEP PRG: ELD 2 (Early Production)
- ③ LEP PRG: ELD 3 (Speech Emergence)
- ④ LEP PRG: ELD 4 (Intermediate Fluency)
- ⑤ LEP PRG: ELD 5 (Advanced Fluency)

Primary Language Development

- ⑥ LEP PRG: PLD 1 (Pre-Production)
- ⑦ LEP PRG: PLD 2 (Early Production)
- ⑧ LEP PRG: PLD 3 (Speech Emergence)
- ⑨ LEP PRG: PLD 4 (Intermediate Fluency)
- ⑩ LEP PRG: PLD 5 (Advanced Fluency)

SERVICE CODES: *(bubble one in each group)*

- ⑪ READING: NATIVE LANGUAGE
- ⑫ READING: TRANSITIONAL ENGLISH
- ⑬ READING: SHELTERED ENGLISH/IMMERSION
- ⑭ READING: MAINSTREAM ENGLISH
- ⑮ READING LEV: KINDER/ILLITERATE
- ⑯ READING LEV: GRADE 1
- ⑰ READING LEV: GRADE 2
- ⑱ READING LEV: GRADE 3
- ⑲ READING LEV: GRADE 4
- ⑳ READING LEV: GRADE 5
- ㉑ READING LEV: GRADE 6
- ㉒ READING LEV: GRADE 7
- ㉓ READING LEV: GRADE 8
- ㉔ READING LEV: GRADE 9

- ㉕ MATH: NATIVE LANGUAGE
- ㉖ MATH: SHELTERED ENGLISH
- ㉗ MATH: MAINSTREAM ENGLISH
- ㉘ SCIENCE: NATIVE LANGUAGE
- ㉙ SCIENCE: SHELTERED ENGLISH
- ㉚ SCIENCE: MAINSTREAM ENGLISH
- ㉛ SOCIAL STUDIES: NATIVE LANGUAGE
- ㉜ SOCIAL STUDIES: SHELTERED ENGLISH
- ㉝ SOCIAL STUDIES: MAINSTREAM ENGLISH
- ㉞ LANG. ARTS: NATIVE LANGUAGE
- ㉟ LANG. ARTS: SHELTERED ENGLISH
- ㊱ LANG. ARTS: MAINSTREAM ENGLISH

SHEET NUMBER ☛ PLEASE DO NOT MARK IN THIS AREA 78420

JCC806 (REV: 2/95)

Mark Reader® by NCS MM1017692381 A1304 Printed in U.S.A.

BEST COPY AVAILABLE

APPENDIX E

Report Cards Scannable Forms
(Grades K through 5)

Music					
Participates in activities to develop skills in rhythm, melody awareness, form and style and expressive quality	O O	O S	O N	O +	O -
Art					
Experiments with line, shape, color, space and texture in a variety of art activities	O O	O S	O N	O +	O -
Dramatic Play					
Participates in role play, chants, nursery rhymes, puppetry	O O	O S	O N	O +	O -

Total Attendance (For the entire academic year)

Present

100	10	20	30	40	50	60	70	80	90	0	1	2	3	4	5	6	7	8	9
O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O

Excused Absences

100	10	20	30	40	50	60	70	80	90	0	1	2	3	4	5	6	7	8	9
O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O

Unexcused Absences

100	10	20	30	40	50	60	70	80	90	0	1	2	3	4	5	6	7	8	9
O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O

Tardy

100	10	20	30	40	50	60	70	80	90	0	1	2	3	4	5	6	7	8	9
O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O

California Education Research Cooperative / Santa Ana Unified School District
Transcription Form - KG
(Academic years 94-95, 95-95, 96-97)

The transcription forms are designed for collecting grade point averages for LEP, FEP and English only speaking students from the Pupil Progress Reports used at the elementary schools. The Pupil Progress Reports are found in the student CUM files

The sample of students, for whom information will be collected, is being drawn randomly from school CUM files. The student CUM files at each school are filed by class corresponding to the teacher name printed on each transcription form. We have provided you with transcription forms which have preprinted student names. Please find the CUM files for these particular students.

- For each of the selected CUM files transcribe the Pupil Progress Report information for academic years 94-95, 95-96, and 96-97 (third trimester-only) to the transcription forms.
- Use a separate transcription form for each academic year.
- Be sure to use the appropriate transcription form with the correct school and teacher names for each student.
- Write down the student identification number on the form and darken the bubbles corresponding to it.
- Make sure that each item on the form has been answered. If an answer is missing, please leave the corresponding bubble empty.
- For indicating student attendance, please darken the bubble(s) that corresponds to the number of days absent for the entire school year. Where necessary darken multiple bubbles to indicate the required value. Although you are transcribing grades from the third trimester only, please be sure to add the number of days absent for the entire school year and darken the bubbles accordingly.
- Use either black ink or a #2 pencil to darken the bubbles. Do not use red ink.

Student Identification Number:

Id Number	0	1	2	3	4	5	6	7	8	9
	O	O	O	O	O	O	O	O	O	O
	O	O	O	O	O	O	O	O	O	O
	O	O	O	O	O	O	O	O	O	O
	O	O	O	O	O	O	O	O	O	O
	O	O	O	O	O	O	O	O	O	O
	O	O	O	O	O	O	O	O	O	O

California Education Research Cooperative / Santa Ana Unified School District

Limited English Proficient

Transcription Form - Grades 1, 2, 3

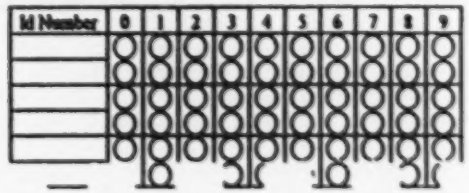
(Academic Year 94-95)

Before completing this form, please be sure to read the Teacher Instruction Sheet that is in your envelope. The transcription forms are designed for collecting grade point averages for LEP, FEP and English only speaking students from the Pupil Progress Reports used at the elementary schools. The Pupil Progress Reports are found in the student CUM files.

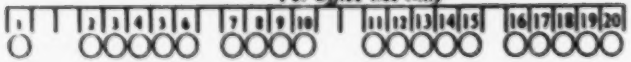
The sample of students, for whom information will be collected, is being drawn randomly from school CUM files. The student CUM files at each school are filed by class corresponding to the teacher name printed on each transcription form. Please find the CUM files for these particular students.

- For each of the selected CUM files transcribe the Pupil Progress Report information for academic years 94-95, 95-96, and 96-97 (third trimester only) to the transcription forms.
- Use a separate transcription form for each academic year.
- Be sure to use the appropriate transcription form with the correct language status, LEP, FEP, and English-only and the correct year.
- Write down the student identification number on the form and darken the corresponding bubbles.
- Make sure that each item on the form has been answered. If an answer is missing, please leave the corresponding bubble empty. If the information on the form does not apply to a particular student, then fill in the corresponding "NA" bubble or leave the bubble blank.
- For indicating student attendance, please darken the bubble(s) that corresponds to the number of days absent for the entire school year. Where necessary darken multiple bubbles to indicate the required value. Although you are transcribing grades from the third trimester only, please be sure to add the number of days absent for the entire school year and darken the bubbles accordingly. If the third trimester grades are missing for any given year, then ignore the attendance information on that form.
- Use either black ink or a #2 pencil to darken the bubbles. Do not use red ink

Student Identification Number:



For Office Use Only

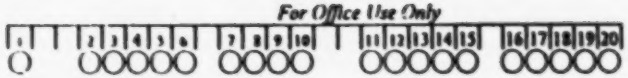


E-2

BEST COPY AVAILABLE

BEST COPY AVAILABLE

For Office Use Only



California Education Research Cooperative / Santa Ana Unified School District

English-Only and Fluent English Proficient

Transcription Form - Grades 1, 2, 3

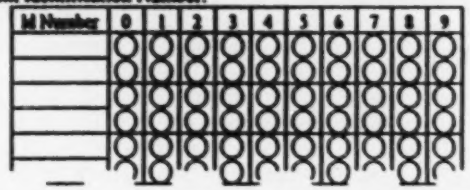
(Academic Year 95-96)

Before completing this form, please be sure to read the Teacher Instruction Sheet that is in your envelope. The transcription forms are designed for collecting grade point averages for LEP, FEP, and English only speaking students from the Pupil Progress Reports used at the elementary schools. The Pupil Progress Reports are found in the student CUM files.

The sample of students, for whom information will be collected, is being drawn randomly from school CUM files. The student CUM files at each school are filed by class corresponding to the teacher name printed on each transcription form. Please find the CUM files for these particular students.

- For each of the selected CUM files transcribe the Pupil Progress Report information for academic years 94-95, 95-96, and 96-97 (third trimester only) to the transcription forms.
- Use a separate transcription form for each academic year.
- Be sure to use the appropriate transcription form with the correct language status, LEP, FEP, and English-only and the correct year.
- Write down the student identification number on the form and darken the corresponding bubbles.
- Make sure that each item on the form has been answered. If an answer is missing, please leave the corresponding bubble empty. If the information on the form does not apply to a particular student, then fill in the corresponding "NA" bubble or leave the bubble blank.
- For indicating student attendance, please darken the bubble(s) that corresponds to the number of days absent for the entire school year. Where necessary darken multiple bubbles to indicate the required value. Although you are transcribing grades from the third trimester only, please be sure to add the number of days absent for the entire school year and darken the bubbles accordingly. If the third trimester grades are missing for any given year, then ignore the attendance information on that form.
- Use either black ink or a #2 pencil to darken the bubbles. Do not use red ink.

Student Identification Number:



California Education Research Cooperative / Santa Ana Unified School District
Limited English Proficient
Transcription Form - Grades 4, 5
(Academic year 95-96)

The transcription forms are designed for collecting grade point averages for LEP, FEP and English only speaking students from the Pupil Progress Reports used at the elementary schools. The Pupil Progress Reports are found in the student CUM files.

The sample of students, for whom information will be collected, is being drawn randomly from school CUM files. The student CUM files at each school are filed by class corresponding to the teacher name printed on each transcription form. We have provided you with transcription forms which have preprinted student names. Please find the CUM files for these particular students.

- For each of the selected CUM files transcribe the Pupil Progress Report information for academic years 94-95, 95-96, and 96-97 (third trimester only) to the transcription forms.
- Use a separate transcription form for each academic year.
- Be sure to use the appropriate transcription form with the correct school and teacher names for each student.
- Write down the student identification number on the form and darken the bubbles corresponding to it.
- Make sure that each item on the form has been answered. If an answer is missing, please leave the corresponding bubble empty.
- For indicating student attendance, please darken the bubble(s) that corresponds to the number of days absent for the entire school year. Where necessary darken multiple bubbles to indicate the required value. Although you are transcribing grades from the third trimester only, please be sure to add the number of days absent for the entire school year and darken the bubbles accordingly.
- Use either black ink or a #2 pencil to darken the bubbles. Do not use red ink.

Student Identification Number:

Id Number	0	1	2	3	4	5	6	7	8	9
	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	○

BEST COPY AVAILABLE

California Education Research Cooperative / Santa Ana Unified School District
English only and Fluent English Proficient
Transcription Form - Grades 4, 5
(Academic Year 96-97)

The transcription forms are designed for collecting grade point averages for LEP, FEP and English only speaking students from the Pupil Progress Reports used at the elementary schools. The Pupil Progress Reports are found in the student CUM files

The sample of students, for whom information will be collected, is being drawn randomly from school CUM files. The student CUM files at each school are filed by class corresponding to the teacher name printed on each transcription form. We have provided you with transcription forms which have preprinted student names. Please find the CUM files for these particular students.

- For each of the selected CUM files transcribe the Pupil Progress Report information for academic years 94-95, 95-96, and 96-97 (third trimester only) to the transcription forms.
- Use a separate transcription form for each academic year.
- Be sure to use the appropriate transcription form with the correct school and teacher names for each student.
- Write down the student identification number on the form and darken the bubbles corresponding to it.
- Make sure that each item on the form has been answered. If an answer is missing, please leave the corresponding bubble empty.
- For indicating student attendance, please darken the bubble(s) that corresponds to the number of days absent for the entire school year. Where necessary darken multiple bubbles to indicate the required value. Although you are transcribing grades from the third trimester only, please be sure to add the number of days absent for the entire school year and darken the bubbles accordingly.
- Use either black ink or a #2 pencil to darken the bubbles. Do not use red ink

Student Identification Number:

Id Number	0	1	2	3	4	5	6	7	8	9
	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	○

APPENDIX F
References

References

Baeten-Beardsmore, H. & Lebrun, N. (1991). Trilingual education in the Grand Duchy of Luxembourg. In O. Garcia (Ed.), Bilingual education. Focusschrift in honor of Joshua A. Fishman (pp. 107-122). Philadelphia: John Benjamins Publishing Company.

Bratt-Paulston, C. (Ed.). (1988). International handbook of bilingualism and bilingual education. New York: Greenwood Press.

Brown, R. (1973). Development of the first language in the human species. American Psychologist, 28, 97-106.

Collier, V. P. (1989). How long? A synthesis of research on academic achievement in a second language. TESOL Quarterly, 23(3), 509-531.

Cummins, J. (1978). Metalinguistic development of children in bilingual education programs: Data from Irish and Canadian Ukrainian-English Programs. In M. Paradis (Ed.), The Fourth Lucas Forum 1977 (pp. 127-138). Columbia, SC: Hornbeam Press.

Cummins, J. (1979). Linguistic interdependence and the educational development of bilingual children. Review of Educational Research, 19, 222-251.

Cummins, J. (1980). The entry and exit fallacy in bilingual education. NABE Journal, 4(3), 25-60.

Cummins, J. (1981a). Age on arrival and immigrant second language learning in Canada: A reassessment. Applied Linguistics, 2, 132-149.

Cummins, J. (1981b). The role of primary language development in promoting educational success for language minority students. In California Department of Education (Ed.), Schooling and language minority students: A theoretical framework (pp. 3-49). Los Angeles, CA: Evaluation, Dissemination, and Assessment Center, California State University, Los Angeles.

Cummins, J. (1994). Primary language instruction and the education of language minority students. In C. Leyba (Ed.), Schooling and language minority students: A theoretical framework (pp. 3-46). (2nd. Ed.). Los Angeles, CA: Evaluation, Dissemination, and Assessment Center, California State University, Los Angeles.

Dulay, H. & Burt, M. K. (1974). Natural sequences in child second language acquisition. Language Learning, 24, 37-53.

Edelsky, C., Hudelson, S., Flores, B., Barkin, F., Altwerger, B., & Jilbert, K. (1983). Semilingualism and language deficit. Applied Linguistics, 4, 1-22.

ernhardt, E. B. & Kamil, M. L. (1995). Interpreting relationships between L1 and L2 reading: Consolidating the Linguistic threshold and the linguistic interdependence hypotheses. Applied Linguistics, 16(1), 15-34.

Fernandez, R. M. & Nielsen, F. (1986). Bilingualism and Hispanic scholastic achievement: Some baseline results. Social Science Research, 15, 43-70.

Gandára, P. (1997). Review of the research on instruction of limited English proficient students. The University of California, Davis.

Garcia, H. D. C. (1981). Bilingualism, confidence and college achievement. Center for the Social Organization of Schools: Johns Hopkins University.

Grosjean, F. (1982). Life with two languages: An introduction to bilingualism. Cambridge, MA: Harvard University Press.

Hakuta, K. (1986). The mirror of language: The debate on bilingualism. New York: Basic Books.

Hornberger, N. H. (1991). Extending enrichment bilingual education: Revisiting typologies and redirecting policy. In O. Garcia (Ed.), Bilingual education: Focusschrift in honor of Joshua A. Fishman (pp. 215-234). Philadelphia: John Benjamins Publishing Company.

Kolers, P. (1978). On the representations of experience. In D. Gerver & H. Sinaiko (Eds.), Language interpretations and communication. New York: Plenum Press.

Lessow-Hurley, J. (1996). The foundations of dual language instruction. (2nd edition). White Plains, NY: Longman.

Mackey, W. F. (1972). A typology of bilingual education. In J. A. Fishman (Ed.), Advances in the sociology of languages (pp. 413-432). The Hague: Mouton.

Mannheim, B. (1984). Una nacion acorrolada: Southern Peruvian Quechua language planning and politics in historical perspective. Language in Society, 13, 291-309.

Paivio, A. & Desrochers, A. (1980). A dual-coding approach to bilingual memory. Canadian Journal of Psychology, 34, 388-99.

Paradis, M. (1980). Language and thought in bilinguals. In W. McCormack & H. J. Izzo (Eds.), The sixth LACUS forum. Columbia, SC: Hornbeam Press.

Pease-Alvarez, L., & Winsler, A. (1994). Cuando el maestro no habla español: Children's bilingual language practices in the classroom. TESOL Quarterly, 28(3), 507-535.

Ramirez, D., Yuen, S. D., & Ramsey, D. R. (1991). Final Report: Longitudinal study of English immersion strategy, early-exit and late-exit transitional bilingual education programs for language-minority children. (Department of Education Contract No. 300-87-0156). San Mateo, CA: Aguirre International.

Richard-Amato, P. (1996). Making it happen: Interaction in the second language classroom. (2nd edition). New York: Longman.

Ruíz, R. (1984). Orientations in language planning. NABE Journal, 8, 15-34.

Selinker, L., Swain, M., & Dumas, G. (1975). The interlanguage hypothesis extended to children. Language Learning, 25, 139-52.

Shin, F. H., & Krashen, S. D. (1996). Teacher attitudes toward the principles of bilingual education and toward students' participation in bilingual programs: Same or different? Bilingual Research Journal, 20(1), 45-54.

Skutnabb-Kangas, T. & Toukomaa, P. (1976). Teaching migrant children's mother tongue and learning the language of the host country. Helsinki: The Finnish National Commission for UNESCO.

Thomas, W., & Collier, V. P. (1997). School effectiveness for language minority students. George Washington University: National Clearinghouse for Bilingual Education.

Troike, R. (1978). Research evidence for the effectiveness of bilingual education. NABE Journal, 3(1), 13-24.

Trueba, H. T. (1979). Bilingual education models: Types and designs. In H. T. Trueba & C. Barnett-Mizrahi (Eds.), Bilingual multicultural education and the professional from theory to practice (pp. 54-73). Rowley, MA: Newbury House.